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Pit and Groove Work among the Olmec-style Monuments of the Gulf Coast Lowlands

Arnaud F. Lambert

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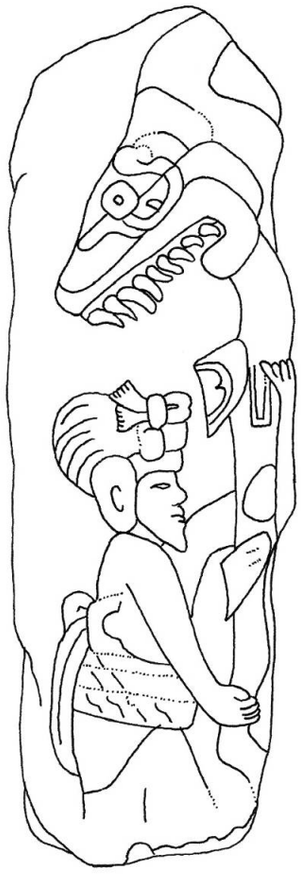

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CHAPTER ONE

If something of the Olmecs has endured that allows us to speak of a civilization, it is their extraordinary sculpture. – Ignacio Bernal (1969: 55)

Monumental sculpture is one of the most recognizable features of Olmec-style art, the earliest known great art tradition in Mesoamerica.[1] Guided by the premise that ancient monuments can provide us with a major source of information about past cultures, Olmec-style art has attracted the attention of numerous scholars. Many have focused their efforts on describing its main stylistic features and formal qualities (e.g. Beverido Pereau 1996; Coe 1965b; de la Fuente 1973, 1977; Pohorilenko 1990). Other researchers, recognizing that Olmec-style monuments have rarely been found within an archaeological context, have attempted to seriate the sculptures based on their stylistic features in order to arrange them in a chronological framework (e.g. Clark and Pye 2000; Clewlow 1974; Milbrath 1979). Another group of archaeologists and art historians has worked on decoding the iconography of these monuments as a way to uncover the worldviews and socio-political structures that underpinned Olmec-style art (e.g. Coe 1973; Joralemon 1971, 1976, 1996; Reilly 1989, 1994, 1995; Reilly and Garber 2003; Tate 1995; Taube 1995, 2004).

This study follows in the footsteps of recent investigations which have attempted to delineate the manner in which Olmec-style sculptures were incorporated into broader cultural frameworks (e.g. Baudez 2012; Clark 2001; Coe and Diehl 1980; Cyphers 1992, 2004; Grove 1981; Porter 1989, 1992; Reilly 2002; Tate 2001, 2011). By emphasizing cultural practices such as monument mutilation, re-use, re-carving or recycling, and the re-positioning of sculptures in the landscape, these studies have opened new vistas into the dynamic social and political relationships which not only led to the creation of these monumental sculptures during the Early and Middle Formative periods (1400-700 BC), but that were also responsible for their modification over time.

Based on this general orientation toward the understanding of Olmec-style art, this study seeks to uncover the significance of certain types of anthropic marking; namely, pits – or, hemispherical depressions with or without dimples - and grooves – or, channel-like depressions; which have been well-known features of many Olmec-style monuments since Matthew Stirling's pioneering studies in the Gulf Coast lowlands of Mexico during the early twentieth century (1940, 1943).[2] My goal in pursuing this avenue of research is both to critically evaluate previous explanations of this phenomenon and to provide a viable alternative interpretation, which takes into account the complex socio-political relationships and worldviews that characterized the Formative period societies of the Gulf Coast.

THE PURPOSE OF THIS STUDY

One of the most interesting issues in the study of Olmec-style art, especially in the southern Gulf Coast lowlands, has been the archaeological debate surrounding the significance of the pits and grooves, which appear on many of the Olmec-style monuments in this region. Numerous explanations have been offered for these enigmatic human-made markings. Some scholars have argued that the pits and grooves were created during the carving process (Stirling 1943); while others have suggested that they are examples of monument mutilation and re-carving (Coe and Diehl 1980; Cyphers 2004; Porter 1989) or possibly a form of record-keeping (Sharer and Sedat 1987; Sedat 1992). A few researchers have also questioned whether human hands created the hemispheric pits at all (Baudez 2012: 23).[3] In many cases, scholars have simply opted to interpret this form of stone marking as having a vague ritual or ceremonial purpose, possibly related to fertility or consecration (e.g. Grieder 1982; Pohorilenko 1974, 1975; Steede and Athy 2000). Regardless of the approach taken, many archaeologists agree that understanding the significance of this pit and groove work is crucial to interpreting the overall meaning of the Olmec-style monuments of the Gulf Coast lowland.

In this study, I present data on all documented instances of pitting and grooving among the

[1] Originally identified by Hermann Beyer (1927) in a review of Blom and La Farge's archaeological explorations in Tabasco, Mexico (1926-1927), the main aesthetic features of Olmec-style art were described by Miguel Covarrubias (1957: 54, 83) as involving the use of massive volumes, simplicity of detail, and monumental proportions. The iconography of Olmec-style art was subsequently detailed by Beatriz de la Fuente (1977; 1981; 1996), Michael Coe (1965b; 1973), David Joralemon (1971), and Anatole Pohorilenko (1990) among many others.

[2] Prior to Stirling's work, Blom and La Farge photographed some of the groove work found on La Venta Monument 1 (1926-1927: 87, Fig. 76) and described similar grooves on a large sandstone block (1926-1927: 89) later identified as La Venta Monument 52 by Matthew Stirling (1968: 35).

[3] Although the pits found on the Gulf Coast Olmec-style monuments do appear to be randomly positioned on individual sculptures, they are usually much larger than natural vesicles found in basalt. Pits and grooves are also not found on all Olmec-style monuments, suggesting that human intention rather than a natural process was involved in their creation and distribution.

sculptures of the Formative Gulf Coast lowlands with the goal of evaluating previous hypotheses regarding the nature and significance of these markings and developing a model that approximates the cultural practices, which incorporated the production of pits and grooves on these monuments. I focus my efforts on examining two kinds of evidence. First, I delineate the main stylistic features of these markings (i.e. their morphology and techniques of execution). I shall show that the pit and groove work of the Gulf Coast lowlands represents a widespread tradition of anthropic marking associated with Olmec-style monuments of the Formative period that can be described based upon a consistent set of morphological features.

Second, I seek to identify the contextual associations of these marks by examining the distribution of pits and grooves on various monuments as well as the placement of the monuments within the landscape of their respective sites. This kind of information will allow me to develop a greater understanding of the role played by pits and grooves within the life courses of Olmec-style monuments as gleaned from excavation reports and photographs detailing their depositional contexts at each site (e.g. Coe and Diehl 1980; Cyphers 1995b, 2004; Drucker 1952; González Lauck 1988; Stirling 1943, 1955). Based on these observations and a series of analogies drawn from El Manatí (Ortíz Ceballos and Rodríguez 1989, 1994, 1999a, 1999b, 2000), I present a model which places the pit and groove work on Olmec-style monuments within a framework of cultural practices which linked rituals of rulership, monument re-carving, and other ritual acts to various forms of status competition between different social groups which are likely to have existed in these Gulf Coast communities during the Early and Middle Formative periods (1400–400 BC). I begin with a brief overview of the different ways in which pits and grooves have been interpreted by archaeologists.

PREVIOUS STUDIES OF PIT AND GROOVE WORK ON OLMEC-STYLE MONUMENTS

A review of the existing literature on the Olmec-style monuments of the Gulf Coast demonstrates that there have been a number of archaeological interpretations regarding the nature and significance of the pit and groove work on these types of monumental sculpture. Based on Robert Bednarik's extensive typology of cup-mark interpretation (2008a: 91-92; 2008b: 214-216), previous archaeological attempts to make sense of the Gulf Coast material seem to fit into seven different categories.

1. Unspecified or specified cultic rituals

Early on, Clewlow, Cowan, O'Connell and Benemann (1967: 71) posited that the grooves on Olmec-style monuments were produced by later Classic and Postclassic period populations taking part in intermittent cult activities associated with axes. Anatole Pohorilenko (1975) advanced a different kind of religious expression for both the pits and grooves. He argued that the grooves are the by-products of rituals intended to transfer the "power" from the monument to a tool or object (Pohorilenko 1975: 267, 272). Similar rituals have been recorded among the Popoluca population in Sayula, Veracruz, as part of their preparations for hunting (Medellín Zenil 1960: 76).[4] For the similarly marked stones found at the base of the El Manatí spring, Ortíz Ceballos and Rodríguez (1999b: 246) suggested that these pits and grooves were produced as part of a religious practice intended to obtain divine power from this sacred place. Later on, Pohorilenko (2007: 24) suggested that pits and grooves were created during ritual practices geared towards grinding the surface of sacred monuments and then using the resulting powder for its curative or magical properties.

By contrast, Steede and Athy (1998: 332-333; 2000: 5) mapped the grooves and pits found among the four colossal heads of La Venta, but were only able to suggest that these markings had a deeper, as yet unspecified, ceremonial function. Echoing the earlier findings of Clewlow, Cowan, O'Connell and Benemann (1967: 78) at San Lorenzo, and Ortíz Ceballos and Rodríguez (1989, 1994, 1999a, 1999b, 2000) at El Manatí and La Merced, Caterina Magni (2000: 20-22) was able to relate the pits, grooves, and other markings found on Olmec-style monuments to the deliberate burial of the sculptures. She further suggested a number of possibilities to account for this relationship such as rituals of regeneration, agricultural rites, or cosmic rituals intended to maintain the natural and political order in the face of chaos.

2. Mnemonic or record-keeping devices

Based in part on Carlo Gay's suggestion that pit and groove work on the colossal heads of La Venta and San Lorenzo Tenochtitlán represented a distinctive Early to Middle Formative period megalithic carving tradition (1971), Robert Sharer

[4] Ethnographic analogs to such ritual practices also come from both Polynesia and Melanesia, where objects were attributed with "mana" or a state of efficacy through their association with chiefs or ancestors (see Guerard 1994: 154; Hocart 1914: 98; Hogbin 1936: 50; Keesing 1984: 147). In Mesoamerica, both documentary evidence and ethnographic research has shown that sacred bundles and stone monuments were likewise associated with ancestors through ritual use and implicated in expressions of political power (see Ayala Falcón 2010; Olivier 2006; Neurath 2010).

and David Sedat (1987: 366; Sedat 1992: 85; Sharer 1989b: 172-173) proposed that the complex designs created by these markings functioned as an early pan-Mesoamerican system of record-keeping with comparable cupulate designs and grooves found at Chalcatzingo in Morelos, Mexico; Xochipala in Guerrero, Mexico; and the Salama Valley in Guatemala (Fahsen 2010: 245-246; Gay 1971: 69; Grove 1987: 166-170).

3. Symbolisms that are no longer recoverable

Going a step beyond the record-keeping hypothesis advocated by Sharer and Sedat (1987), Gay (1973) argued that the complex designs created by the pit and groove work on Olmec-style monuments represented a form of early writing. Athy (1993: 137-140) advanced a similar proposition. He recorded the position of grooves on both La Venta Monument 1 and La Venta Monument 63 and suggested that these marks corresponded to proto-Ogamic inscriptions. Elsewhere, Coe and Diehl (1980: 298) also allowed for the possibility that the hemispherical pits had a semasiographic function based on their resemblance to the use of dots with circles as iconographic devices for indicating stars in the *Primeros Memoriales* of Sahagún. Both Coe and Diehl also suggested that the pits they observed at San Lorenzo Tenochtitlán could represent constellations (1980:306).

4. Specific symbolisms

Recalling Clewlow's (1974: 13) earlier characterization of pits with dimples as being reminiscent of negative female breasts, Anatole Pohorilenko (1974: 33-34; 1975: 272) used a cross-cultural comparative framework to argue that the pits or cup-marks were ceremonial markings linked to broader notions of fertility and/or ancestor worship.[5] Grieder (1982: 43) expanded on this notion by drawing upon both ethnohistoric and ethnographic analogies among the indigenous societies of India and North America to argue that pits seen on the stelae of La Venta (Grieder 1982: 40, Fig. 16), and more generally all cup-markings, referred to the "vulva" of a feminized earth, while the grooves represented phalluses.

5. Elements of belief systems

Under this rubric, it is possible to discuss two distinct modes of explanation for pits and grooves. The first type involves referencing religious activities and rituals, sometimes identified as magical practices (e.g. Clewlow, Cowan, O'Connell and Benemann 1967; Magni 2000; Ortíz Ceballos and Rodríguez 1999b, 2000; Pohorilenko 1975, 2007). The second type of explanation involves examining the role pits and grooves played in the expression of socio-political ideologies or changes to socio-political structures over time (Heizer 1960: 270; Lowe 1998: 91-93). As the more exclusively religious explanations have already been discussed in a previous section, I will focus here on explanations that predominantly deal with socio-political ideologies.

The characterization of pits and grooves as forms of monument mutilation (i.e. the deliberate breakage and defacement of monuments) -- linked variously to modern vandalism, Formative period peasant revolts, or the decadence and eventual collapse of La Venta and San Lorenzo Tenochtitlán -- has a long history in the study of Olmec-style art in the Gulf Coast (e.g. Clewlow, Cowan, O'Connell and Benemann 1967: 71; Coe 1968b: 77; Coe and Diehl 1980: 297-298; Covarrubias 1957: 76-77; Drucker, Heizer and Squier 1959: 229-230; Stirling 1940: 334). However, it was not until David Grove (1981) compared instances of monument mutilation from Gulf Coast sites such as San Lorenzo Tenochtitlán and La Venta with those of Chalcatzingo that archaeologists were able to develop more refined models of these cultural practices. In particular, Grove (1981: 63; Schnabl 1988: 32-33) proposed three hypotheses to account for the basic patterns of mutilation he observed at these sites: (1) monuments were destroyed in connection with a calendric cycle; (2) monument mutilation accompanied changes in ruling dynasties; and (3) monument mutilation occurred upon the death of a ruler as a way to diminish or eliminate the "sacred power" located within objects associated with a previous ruler.[6] Of the three hypotheses, Grove (1981: 63-65) favored the third, but was unable to satisfactorily explain the absence of mutilation on monuments with clear connections to rulership such as many of the full-round sculptures depicting rulers as well as some of the thrones (Pool 2007: 121). As a way to explain the apparently random nature of monument mutilation, Clark (1997: 220-222) has recently offered an explanation that expands on Grove's earlier hypothesis that mutilation may have occurred with a change in rulership by relating monument

[5] Comparisons with cup-marks from sites located outside of Olman indicate that the proposed link between the pit and groove work in the southern Gulf Coast lowlands and ancient conceptions of fertility, rain and water is worthy of serious consideration. Although the shallow pits of Hierve el Agua in Oaxaca were not carved on pre-existing monuments, but were excavated into lime mud and clay instead, recent work at this site has shown that the pits were an integral part of an extensive irrigation system and were important parts of the agricultural activities conducted there (Neely, Caran, and Winsborough 1990: 146-148).

[6] A similar proposition was advanced to account for grooves present on the monuments of La Venta (see Drucker, Heizer, Squier 1959: 197).

mutilation to competition among political factions vying for power after the passing of a ruler.

Focusing on the colossal heads of San Lorenzo and La Venta, James Porter (1989, 1990) complemented David Grove's hypotheses by demonstrating that some pit and groove work was associated with the re-carving of thrones into colossal heads.[7] In particular, he suggested that the flattened posterior facets and peculiar ear features of some of the colossal heads, such as San Lorenzo Monuments 2 and 53 (Figure 1.1 and Figure 4.5), may be remnants of the flat bases and niches typical of the thrones from which they were carved (Porter 1989: 24-26, 1990: 92). Indeed, recent archaeological work at San Lorenzo has detected a monument workshop that specialized in the recycling of monuments, possibly indicating that elites at the site were no longer able to have new monuments produced and therefore needed to appropriate older sculptures (Cyphers 1999: 166-168, 2007: 41-42). Interestingly, studies of Piedra Labrada Stela 1 and Medias Aguas Monument 1 have extended the practice of monument re-use and re-carving well into the Classic period, suggesting that such traditions enjoyed great continuity in the southern Gulf Coast lowlands (Ladrón de Guevara 2008, 2010).

Fig. 1.1 – San Lorenzo Monument 53 (Colossal Head 7) (Museum of Anthropology, Xalapa, Veracruz). Photograph by the author.

[7] John Graham had earlier made a similar suggestion regarding Tak'alik Ab'aj Monument 23 (1981, 1989). However, for this Pacific Coast example, Graham argued that a colossal head had been re-carved into a throne.

Claude-François Baudez also ventured an intriguing new perspective on the possible significance of monument mutilation, such as pit and groove work, in Olmec-style art (2012). Calling Porter's re-carving hypothesis into question, Baudez instead suggested that the colossal heads of La Venta and San Lorenzo did not depict rulers, but were portrayals of the severed heads of sacrificed victims (2012: 15). In his view, their broad noses, open mouths, and crossed eyes were intended to stand in stark contrast to the standardized feline attributes which characterized Olmec-style sculptures of rulers, priests and supernaturals, e.g. almond-shaped eyes, snarling mouths, and feline posture (Baudez 2012: 21-24). He then argued that the "ugly" monumental depictions of sacrificial victims (i.e. the colossal heads) were targeted for lesser amounts of monument mutilation and destruction, especially pitting, when La Venta and San Lorenzo collapsed than the "beautiful" images of elite (feline) power found among Olmec-style thrones and sculptures in full round.

Beyond the Formative period Gulf Coast lowlands, monument mutilation is evident in both the Maya lowlands and highlands from the Early Classic period onward (e.g. Sharer and Sedat 1987; Shook 1958). Although monument defacing, re-positioning and recycling has been identified at major Maya centers such as Tikal, Tonina, Caracol, Copán and Naranjo (Graham 1996; Just 2005; Martin 2000), it does not appear to have involved pit and groove work. Rather, it seems that the most common forms of Maya monument mutilation emphasized the deliberate breaking, fracturing, and decapitation of sculptures and stelae – i.e., to symbolically destroy these monuments (Stanton and Brown 2003:8). While originally linked to violent conflict and revolts (Shook 1958: 33) as some scholars have argued for the Olmec-style monuments considered here, careful analysis of the contexts of ritual deposits at Cerros (Freidel 1986), Colha (Mock 1998) and Piedras Negras (Coe 1959) has identified many instances of monument destruction serving as concomitants to ritual behavior ethnographically and archaeologically linked with the practice of divesting artifacts and features of the built environment of their symbolic and ritual power in the sense that it was linked to sacred features of the landscape or deceased ancestors (Pendergast 1998).

Similar forms of iconoclasm and termination rituals also appear to have been some of the major factors in the systematic destruction of major temples and palaces in the Classic period urban center of Teotihuacán (Millon 1988: 152-155), although some sculptures also show evidence of re-use (Berrin and Pasztory, eds. 1994: 172). While the significance of these acts are still debated (López Luján *et al.* 2006:28-31), they appear to have

involved the intentional toppling, breaking, and burning of stone masks, rain god imagery, and anthropomorphic sculptures – possibly representing prisoners during the Xolalpan phase (AD 350-550) and Metepec phase (AD 550-650) of the Classic period (e.g. Berrin and Pasztory, eds. 1994: 177-178; Jarquín Pacheco and Martínez Vargas 1982a: 122-123, 1982b: 103; López Luján *et al.* 2006:20-21).[8]

6. Receptacles for offerings

Even though this category of explanation may be closely related to the religious practices and belief systems mentioned previously, it has often been used as a separate mode of explanation in the study of cup-marks (Bednarik 2008b: 215). At Chalcatzingo, Gay (1972: 84) hypothesized that cup-marks may have served a ceremonial purpose and were used to collect rain and/or dedicatory water in connection with rites of propitiation. Although the square-slots and rectangular niches found among some of the Olmec-style monuments of the Gulf Coast such as San Lorenzo Monument 2 may have been also used to deposit offerings (Clewlow, Cowan, O'Connell, and Benemann 1967: 79; de la Fuente 1977: 41), most scholars have argued that the hemispherical pits and depressions on these monuments were not used in this way based on the placement of these features on both the vertical and horizontal surfaces of the monuments (Pohorilenko 1974: 27).[9]

7. Other purely utilitarian purposes

The grooves found on the monuments of the Gulf Coast have sometimes been associated with more practical functions. For instance, Clewlow, Cowan, O'Connell and Benemann (1967: 71-78), Clewlow (1974: 13), Covarrubias (1944: 29), and Stirling (1943: 52) have described the grooves found on monuments in La Venta and San Lorenzo as "sharpening grooves" that were produced by the grinding or sharpening of axes or celts. Echoing this view, Lowe labeled such stones as "celt polishers" in his inventory of the material culture of the Gulf Coast lowlands (1989: 49). This hypothesis was also used to explain the presence of grooves on a large white limestone slab found to the west of the ceremonial precinct at La Venta (Drucker, Heizer, and Squier 1959: 196-197). A similar interpretation has been proposed for the grooves produced on the sandstone "pre-forms" found in the sacred springs of El Manatí and La Merced (Ortíz Ceballos and Rodríguez 1999b: 246; Rodríguez and Ortíz Ceballos 1997: 91, 2000: 162-164).

SUMMARY

To summarize the situation so far, even though previous archaeological interpretations offer differing, occasionally mutually exclusive, hypotheses regarding the significance of pit and groove work found on the Olmec-style monuments of the Formative period Gulf Coast lowlands, they also provide valuable insights that must be reconciled in any treatment of these markings. As result, many of these previous interpretations will form an important element in my subsequent treatment of these anthropic monument markings from the Gulf Coast.

[8] In contrast to the examples documented from the Gulf Coasat lowlands, however, pit and groove work has not been reported on the monuments of Teotihuacán.

[9] Echoing Porter's work on the re-carving of Olmec-style monuments on the Gulf Coast, Doering and Collins (2010: 274-279) have suggested that the square-slots found on the back of Kaminaljuyú Monument 65 may have been used to prepare this monument for recycling.

CHAPTER TWO – RESEARCH DESIGN AND METHODOLOGY

Before discussing the research design and methods used in this study, it is necessary to more clearly define the object of my investigation; namely, pit and groove work.

TERMINOLOGICAL ISSUES

Since these types of anthropic marking were first identified as significant features (Stirling 1943), there has been confusion regarding exactly what phenomenon counts as pit and groove work.[1] Such terminological issues need to be addressed prior to defining pit and groove work more properly.

At least two distinct terminological problems have come to light in archaeological investigations of pit and groove work in the southern Gulf Coast lowlands. First, there appears to be no consistent typology in use for referring to these anthropic markings and many of the terms used often mask significant interpretive biases. A brief overview of the various schemes used to categorize pits and grooves is sufficient to demonstrate this lack of clarity.

Matthew Stirling (1943: 52, 56) began by differentiating between hemispherical cups, rectangular niches and striations (or axe-sharpening grooves). Later on, he added the category of celt-like depressions (Stirling 1947). Based on their work at the site of La Venta, Drucker, Heizer and Squier (1959: 197) referred to the same markings as narrow-cut grooves (instead of striations), gouges, and conical cups. These initial lists were expanded and redefined by Clewlow, Cowan, O'Connell and Benemann (1967: 70-83) to include anthropic markings such as sharpening grooves and scored striations, gouges, rectangular niches, ground pits with dimples, and ground pits without dimples. Many of these categories rested on assumptions regarding the techniques of execution used to make the marks or their probable purpose. For instance, Clewlow (1974: 13) referred to the dimples associated with some pits as small "nipples" based on the presumption that dimpled pits looked like "negative breasts." To this long list of terms, Pohorilenko (1975: 268-269) added the category of the "nipple mark" to refer to small anthropic concavities found on some of the Olmec-style monuments of the Gulf Coast; while Beatriz de la Fuente (1973: 11) differentiated between circular pits, grooves and "nichos pequeños" (small niches) as forms of intentional mutilation.

Later on, Coe and Diehl (1980: 297-298) replaced the category of rectangular niches with the term "slots" and appear to have preferred the term "sharpening groove" over "striation." They also adopted the practice of equating pits and grooves with cultural practices of monument mutilation, such as fracturing and pounding. David Grove (1981: 49-51) and Ann Cyphers (2004: 74) expanded this approach, including rectangular niches (*oquedades rectangulares*), pits (*depresiones circulares*), and grooves (*acanaladuras*) as forms of destruction and mutilation alongside decapitation, breakage, and effacement. Unfortunately, by placing pits and grooves under such broad rubrics, many archaeologists have also run into the issue of being unable to differentiate pit and groove work from possibly unrelated forms of monument marking such as decapitation and "slotting."[2]

To clarify some of these terminological issues, Pohorilenko has recently proposed to standardize the terms used to categorize these rock markings (2007: 27-28). He adopted the following terms: cup-marks (i.e. hemispherical pits or conical cups, without dimples), pitted cups (i.e. pits with dimples), pit marks (i.e. non-anthropic vesicles and anthropic "nipple marks"), fine grooves (i.e. striations), concave grooves (i.e. sharpening grooves), elongated excisions (i.e. gouges), celt-like depressions, circular depressions, ovoid marks, and oblong marks. While Pohorilenko's attempt to standardize the terms used to study the anthropic markings on Olmec-style monuments is certainly well-taken, I have chosen to keep some of the older terms – pits without dimples, pits with dimples, and grooves – in order to avoid adding further to the terminological confusion accorded to pit and groove work.

A second terminological issue to face studies of pit and groove work in the southern Gulf Coast lowlands revolves around their relationship to cup-marks and similar phenomena in other parts of Mesoamerica. As I previously mentioned, there have been a few attempts to combine the cup-marks observed on the Olmec-style monuments of the Gulf Coast with those documented on boulders at Chalcatzingo in Morelos and at Xochipala in Guerrero (Gay 1971, 1973), and on Formative period boulders and monuments from the highlands of Guatemala (Fahsen 2010; Sedat 1987; Sharer and Sedat 1987; Sharer 1989). However, until

[1] Baudez (2012: 21), by contrast, is dubious of the anthropic nature of the pit markings due to their apparently random distribution.

[2] Examples of such broad categories include: "mutilation and destruction" (Baudez 2012; Coe and Diehl 1980; Grove 1981; Cyphers 2004; Magni 2000), "ceremonial markings" (Pohorilenko 1974, 1975), and even "extraneous markings" (Pohorilenko 2007).

evidence of such a pan-Mesoamerican cupulate tradition is produced that does not rely exclusively on the perceived morphological similarities between the cup-marks of these different regions, we cannot assume that these anthropic markings are part of a single Formative period cultural tradition or even contemporary works (Bednarik 1993: 139).[3]

A DEFINITION OF PIT AND GROOVE WORK FROM THE GULF COAST LOWLANDS

As noted above, the pits and grooves found on the Olmec-style monuments of the Gulf Coast lowlands differ from those of other Mesoamerican sites, like Chalcatzingo in Morelos. Generally speaking, the pit and groove work of the Gulf Coast is remarkably uniform throughout the region and is not associated with different cultural traditions and chronological periods as are the cup-marks of Chalcatzingo (Gay 1972; Grove 1987; Lambert 2010). In fact, these markings can be characterized by a consistent set of traits pertaining to their morphology and technique of execution (Figure 2.1).

A typical pit consists of a cup-mark with a round or ovoid aperture and either a hemispherical or "pitted" profile (i.e. a hemispherical cup-mark containing a small dimple or concavity at the base). Such cup-marks have diameters ranging from 2 to 30 cm and depths ranging from 1 to 5 cm. They can occur in any orientation on the surface of Olmec-style monuments – vertical, horizontal, and diagonal –, but observations of similar markings in other parts of the world suggest that pits tend to be smaller when created on vertical surfaces than when they were created on horizontal surfaces (Bednarik 2000a: 71). This pattern is likely due to the manner in which pits were executed (see Appendix Two). Recent efforts to replicate these marks on extremely hard quartzite rock in India (Kumar 2007 in Bednarik 2008a: 85) demonstrate two important points. First, pits were likely not ground into stone as has been reported by some archaeologists (e.g. Clewlow, Cowan, O'Connell and Benemann 1967), but were created by some technique of direct percussion, such as hammering or pounding. The abraded appearance of the pits may be the result of the pounding action crushing the rock crystals or grains into fine dust particles (Bednarik 2008a: 86). It is also unlikely that the pits were created using some means of indirect percussion, such as chiseling or pecking, because the resulting tool-wear would have produced excessive tool debris, which has not been observed in the Gulf Coast lowlands. Second, even the creation of shallow pits produced in hard rock required an incredible amount of physical effort, a lot of precision and skill, and a large investment in time.

By contrast, typical grooves consist of linear or, less frequently, curvilinear marks which taper toward the ends of the marking, thereby creating "boat-shaped" channels. Grooves have either U-shaped or V-shaped profiles which range from 1 to 3 cm in width and 0.5 to 1 cm in depth. In terms of length, typical grooves range from 5 to 25 cm, although grooves as long as 38 cm do appear on the monuments of the Gulf Coast lowlands from time to time. Like pits, grooves occur on a variety of surfaces on Olmec-style monuments, but appear to be wider and longer when initially produced on a horizontal surface probably due to the biomechanics of their production (Clewlow, Cowan, O'Connell and Benemann 1967: 71). It is also likely that these marks were probably produced through abrasion using stone-grinding tools rather than pecking using chisels. Thus, even though the term "axe-sharpening groove" may or may not be a correct interpretation of their function, it may be an insightful description of their technique of execution.

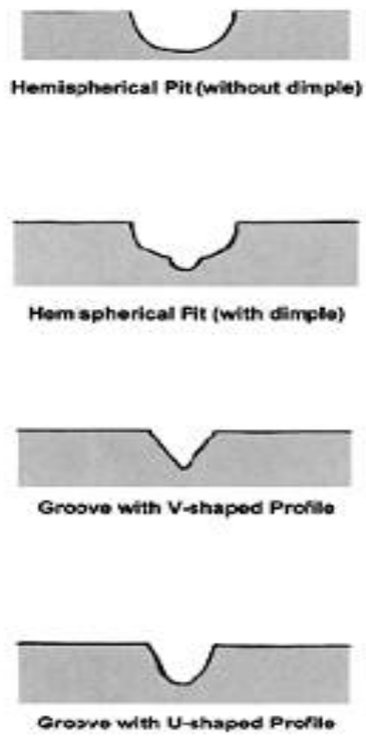
Hemispherical Pit (without dimple)
Hemispherical Pit (with dimple)
Groove with V-shaped Profile
Groove with U-shaped Profile

Fig. 2.1 – Morphological Features of Pit and Groove Work in the Gulf Coast Lowlands.

[3] For instance, cup-marks on boulders are ubiquitous throughout Mesoamerica and appear in coastal Jalisco and Nayarit (Mountjoy 1987, 1991), Chiapas (Strecker and Weber 1980), Oaxaca (Urcid and Joyce 2001), and the Pacific Coast of Guatemala (Wolley 2002). Because these rock markings lack stratigraphic associations, they cannot be dated in any precise manner. This situation makes it difficult for archaeologists to relate cup-marks to specific cultural traditions.

RESEARCH DESIGN AND METHODOLOGY

Initial observations suggest that the pit and groove work on Olmec-style monuments was the result of a post-carving and post-re-carving cultural practice. That is, these markings were placed on previously carved monuments, although for the time being the hypotheses that these markings were part of ritual acts of monument mutilation or recycling were the products of utilitarian action, or had some semasiographic or ritual purpose remain important possibilities. Thus, to better understand the significance of the pits and grooves, and to illuminate the nature of the cultural practices and social relationships associated with their creation, I focus my efforts on examining the following data: (1) the number of pits and/or grooves present on each of the monuments; (2) the location of the pits and/or grooves on each of the monuments; (3) the presence or absence of patterning in the distribution of pits and/or grooves on each of the monuments; (4) the types of monuments selected for pit and/or groove work; (5) the taphonomy of the monuments (i.e. what happened to the monuments after they were initially manufactured and before they were recorded by archaeologists);[4] and (6) the placement of the monuments relative to other features within the landscape of their respective sites.

Fig. 2.2 – San Lorenzo Monument 8 (San Lorenzo Site Museum, Tenochtitlán, Texistepec, Veracruz). Photograph by the author.

The data used in this study was drawn from a number of sources. During May 2010, I spent several weeks in Mexico recording the Olmec-style monuments from La Venta in Tabasco, San Lorenzo Tenochtitlán in Veracruz, and other Formative period sites in the Gulf Coast lowlands that were available at the La Venta Park Museum in Villahermosa, the La Venta Site Museum, the San Lorenzo Site Museum, the Museum of Anthropology at Xalapa, the Tres Zapotes Museum, the Regional Museum of San Andrés Tuxtla, the Tuxteco Museum at Santiago Tuxtla, the central plaza of Santiago Tuxtla, and the National Museum of Anthropology in Mexico City. In cases where monuments with pit and groove work were documented by previous researchers, but the monuments themselves either did not display obvious signs of pitting and grooving or were no longer available for first-hand observation, I supplemented my records with drawings based on the photographs and descriptions published by other archaeologists. In this way, I was able to develop a comprehensive accounting of the pit and groove work that characterized the Olmec-style monuments of the Gulf Coast lowlands.

Fig. 2.3 – Posterior View of San Lorenzo Monument 20, showing pits and slots (San Lorenzo Site Museum, Tenochtitlán, Texistepec, Veracruz). Photograph by the author.

To facilitate this analysis, I will confine my observations to stone markings on the surface of monuments that conform to the main features of the pits and grooves that I mentioned above. As such, my study does not consider the following categories of natural and/or anthropic monument marking: (1) vesicles and natural basaltic air pockets; (2) small anthropic concavities or pits (measuring >1 cm), sometimes referred to as "nipple marks" (Pohorilenko 1974: 19); (3) celt-shaped indentations – e.g. San Lorenzo Monument 8 (Figure 2.2); (4) forms of re-carving not specifically associated with pit and groove work – e.g. San Lorenzo Monument 53 (Cyphers 2004: 115-118; Porter 1989: 26) (Figure 1.1); (5) square and rectangular niches as seen on the posterior facet of La Venta Stela 1 or the back of San Lorenzo Monument 20 and sometimes referred to as "slotting" (Coe and Diehl 1980: 298) (Figure 2.3); (6) striations originally produced either during the manufacturing (or recycling) of a monument and/or during its transportation from a quarry, e.g. the shallow incised lines on the posterior and

[4] This taphonomic perspective also involves searching for evidence of re-use, recycling, and re-positioning (Coe and Diehl 1980; Grove 1981; Porter 1989, 1990).

superior facets of Tres Zapotes Monument A (Clewlow, Cowan, O'Connell and Benemann 1967: 76) (Figure 2.4); and (7) circular depressions and undulating grooves that are integral to the overall composition of a monument or due to the highly vesicular nature of the basalt medium (Figure 2.5).

Fig. 2.4 – Posterior View of Tres Zapotes Monument A, showing the striations on top of this colossal head (Tres Zapotes Museum, Tres Zapotes, Veracruz). Photograph courtesy of Richard McLain.

The results of this study will be examined in terms of whether or not they fit the expectations of the different hypotheses proposed by archaeologists over the last half-century of work in the Gulf Coast lowlands. In addition, the results will be compared to other Formative period contexts featuring pit and groove work in the Gulf Coast; namely, the sacred springs of El Manatí and La Merced, to investigate if any clues to the cultural practices involved in the placement of grooves and pits on Olmec-style monuments can be gleaned from these sites. In this way, a new archaeological interpretation of the significance of pit and groove work in the Formative period Gulf Coast will be developed and evaluated. I start by describing the geographic and cultural setting of the Olmec-style monuments with pit and groove work.

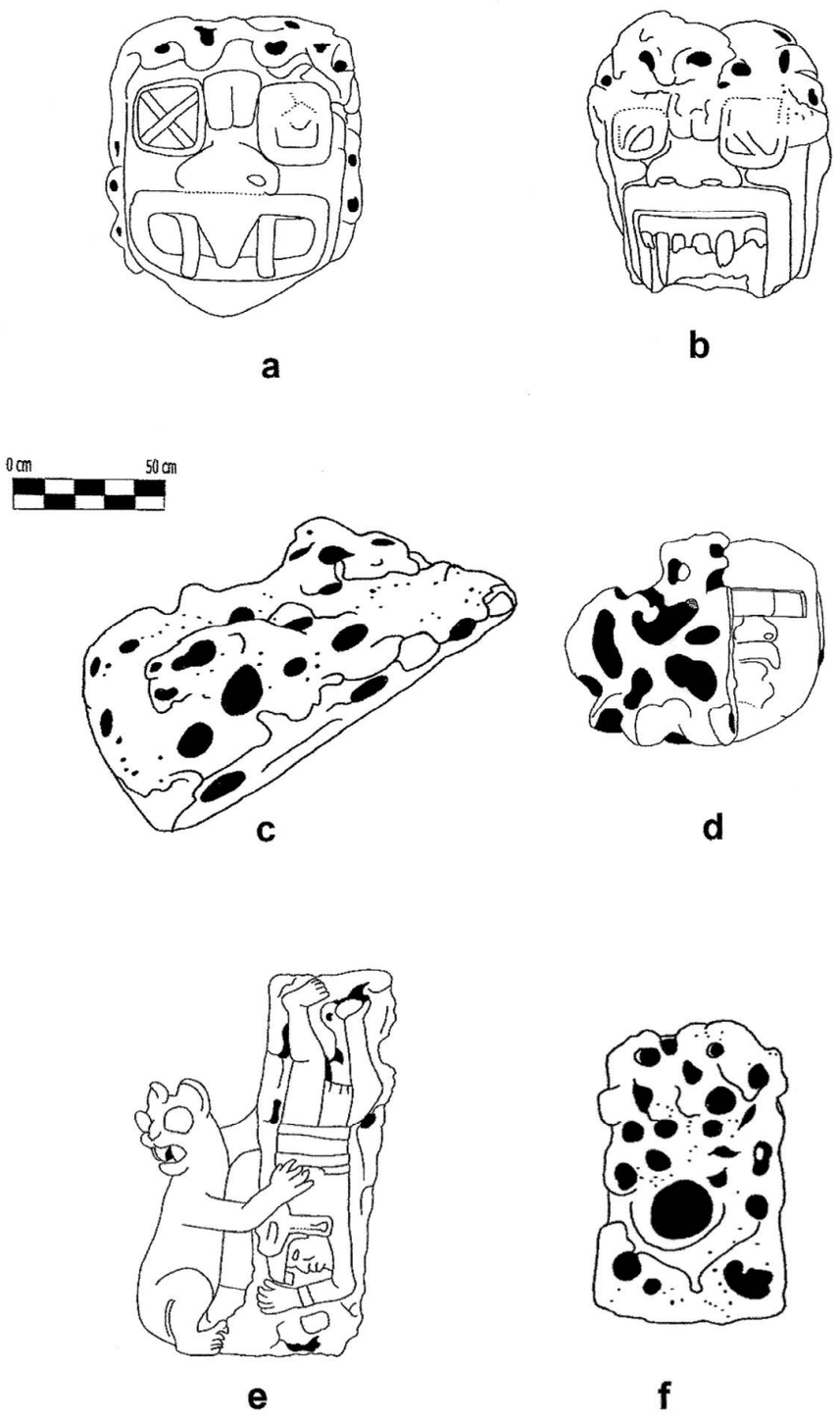

Fig. 2.5 – Selection of Olmec-Style Monuments with Circular Depressions and Undulating Grooves: (a) Laguna de los Cerros Monument 1 (Museum of Anthropology, Xalapa, Veracruz); (b) Laguna de los Cerros Monument 2 (Museum of Anthropology, Xalapa, Veracruz); (c) San Lorenzo Monument 74 (after Cyphers 2004:140, Plate 84); (d) San Lorenzo Monument 105 (San Lorenzo Site Museum in Tenochtitlán, Texistepec, Veracruz); (e) San Lorenzo Monument 107 (San Lorenzo Site Museum in Tenochtitlán, Texistepec, Veracruz); and (f) San Lorenzo Monument 117 (San Lorenzo Site Museum in Tenochtitlán, Texistepec, Veracruz). Drawings by the author.

CHAPTER THREE – ARCHAEOLOGICAL BACKGROUND

In order to more properly contextualize Olmec-style monuments with pit and groove work, it is important to place these art works within a geographic, cultural and temporal framework. The following panorama describes in broad terms the distribution pit and groove work in Olman, or "the land of rubber", as the southern Gulf Coast lowlands of Mexico were referred to by the Mexica in the Late Postclassic period (Diehl 1996: 29).

THE SETTING: OLMAN, THE GULF COAST LOWLANDS OF MEXICO

Sometimes referred to as the "Olmec heartland" (Coe 1989; Diehl and Coe 1995), the southern Gulf Coast lowlands encompass the coastal regions of the modern Mexican states of Veracruz and Tabasco (Figure 3.1). Traditionally, archaeologists have separated this region from other parts of Mesoamerica using three rivers as convenient borders – the Papaloapan River to the north, the Coatzacoalcos River in south and the Tonalá River to the east. The Gulf Coast lowlands consist of a broad coastal plain characterized by a diverse yet tropical climate (Coe 1965a: 679-681; Pool 2007: 67-71). In this hot and humid region, rain is abundant with a prolonged wet season and a short dry season, interspersed with cooler January rains and winds. As such, the Gulf Coast is well suited for intensive agricultural production, especially maize and bean cultivation (Pope *et al.* 2001). The northern portion of the Gulf Coast lowlands also contains a large volcanic mountain range, the Tuxtla Mountains, reaching up to 1200 meters in altitude. Although slightly more temperate than the southern coastal zones, this part of the Gulf Coast also boasts significant rainfall, numerous river systems and a large body of fresh water, Lake Catemaco (Vásquez Zárate 2008: 23). Even though the Gulf Coast lowlands are highly productive in terms of agriculture, many of the resources coveted by Formative period peoples in this area were singularly lacking, such as obsidian, iron ore, and jade (Coe, Snow and Benson 1986: 94-95). The basalt used for most Olmec-style monuments in the coastal areas, for instance, had to be imported from the Tuxtla Mountains (Williams and Heizer 1965).

While the exact number of Formative period sites in the southern Gulf Coast lowlands is not yet known, several sites including San Lorenzo Tenochtitlán, La Venta, Tres Zapotes, and perhaps Laguna de los Cerros, constituted the major known centers during this time (1500-400 BC). San Lorenzo Tenochtitlán is the earliest center known in the region (Coe and Diehl 1980). It is located on the edge of the Coatzacoalcos River, near the Chiquito River. This archaeological zone consists of at least three distinct sites: San Lorenzo, Tenochtitlán, and Potrero Nuevo. Founded c. 1500 BC, San Lorenzo Tenochtitlán was strategically positioned on a plateau with several low ridges situated above the flood plain of the Chiquito and Coatzacoalcos Rivers. Featuring earthen mound architecture, sunken patios, and an elaborate aqueduct system, San Lorenzo Tenochtitlán reached its apogee during the San Lorenzo A and B phases of the Early Formative period (1150-900 BC). During this time, the central core of the site was decorated with numerous monumental sculptures such as colossal heads, thrones, and sculptures in full round (Cyphers 1997a, 2004). Many were carved from basalt and andesite sources in the Tuxtla Mountains, particularly Cerro Cintepec, located approximately 90 km to the north (Coe and Diehl 1980; Williams and Heizer 1965). By 900 BC, the site was abandoned only to be re-occupied briefly during the Nacaste and Palangana phases of the Middle Formative period (600-400 BC) and then sporadically in later periods (Symonds, Cyphers and Lunagómez 2002: 88-117). Numerous small villages and minor ceremonial centers occupied the hinterland around San Lorenzo during the Early Formative period, attesting to the importance of San Lorenzo at this time. Some of the sacred sites included Loma del Zapote, La Merced, and El Manatí. Located less than 3 km from San Lorenzo, Loma del Zapote consisted of a large mound (El Azuzul) which was decorated with numerous feline and anthropomorphic figures which appear to have been re-positioned over time to reflect different ritual programs or mythic narratives (Cyphers 1997b: 184-191). El Manatí, by contrast, was characterized by a large spring that was the site of numerous ritual deposits beginning in the Early Formative period (1600-1500 BC). These deposits included greenstone celts, undressed boulders with pits and grooves, twenty-four wooden busts, and rubber balls (Ortíz Ceballos and Rodríguez 1999b; Rodríguez and Ortíz Ceballos 1997, 2000).

As San Lorenzo Tenochtitlán entered into its prolonged decline, the site of La Venta in Tabasco began to achieve prominence during the Middle Formative period (900-400 BC) (Lowe 1989: 54-61). During this time, La Venta quickly grew from a small village to a major ceremonial center dominated by its well-known Great Pyramid, one of the largest structures in the southern Gulf Coast lowlands (González Lauck 1996: 75). Like San Lorenzo before it, the central core of La Venta featured groups of mounds interspersed with colossal heads, thrones, and a new type of

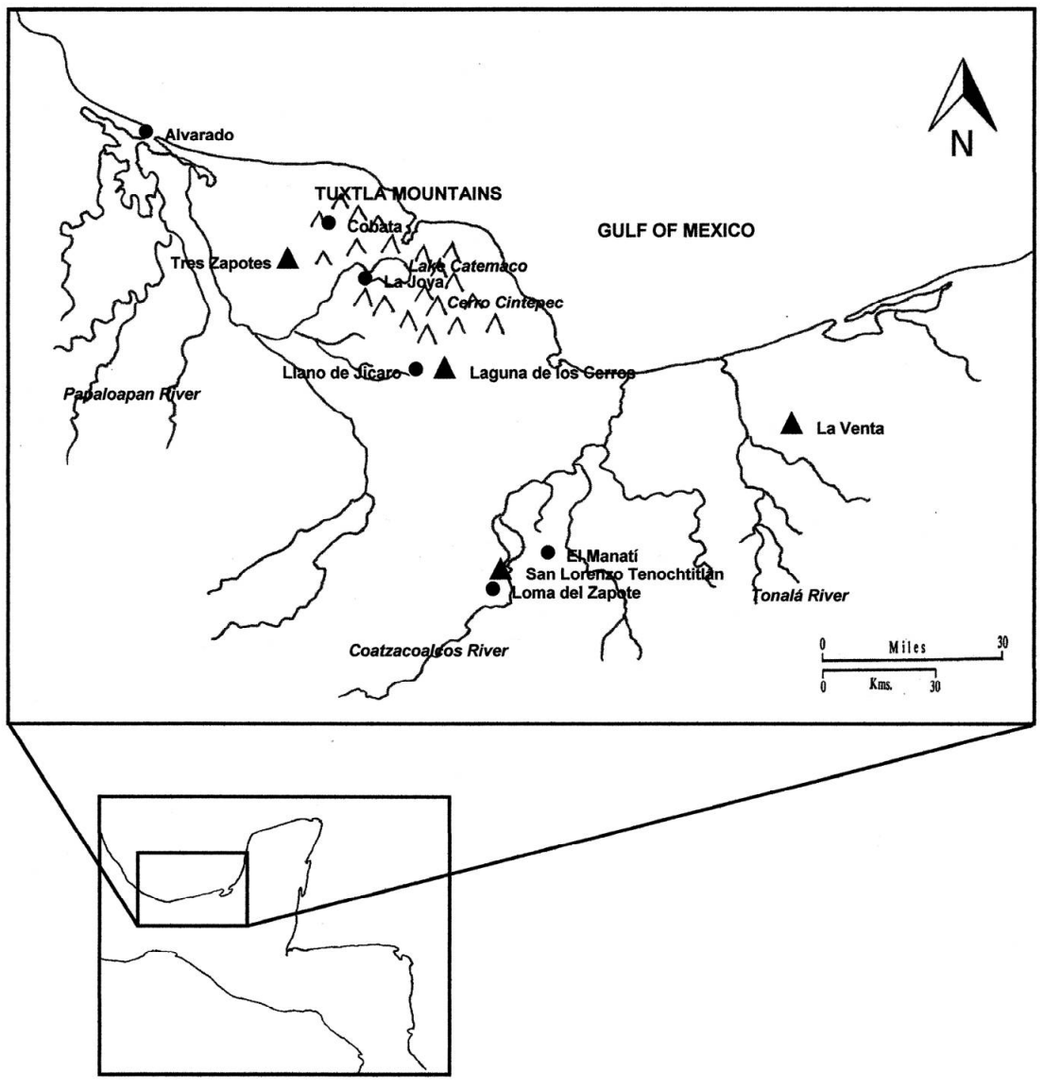

Fig. 3.1 – Map of the Formative period southern Gulf Coast Lowlands (Olman), showing sites mentioned in the text (triangles indicate major regional centers; circles indicate smaller sites). Drawing by the author (after Pool 2007: 5, Fig. 1.3).

monumental sculpture, the stela (Ochoa and Castro-Leal 1986; Porter 1992). With the exception of some monuments made from locally-derived sandstone and schist, most of the monuments at La Venta were made from basalts that were imported into the site (Williams and Heizer 1965). Eventually, like its predecessor San Lorenzo, La Venta also went into decline sometime at the end of the Middle Formative period (c. 400-350 BC) (Lowe 1989: 37).

Laguna de los Cerros is a little known, but important regional center located on the southern periphery of the Tuxtla Mountains. Initially investigated by Alfonso Medellín Zenil (1960) and Frederick Bove (1978), this site appears to have been occupied from the beginning of the early Middle Formative period through the Early Classic period. At the height of its power around 900 BC (San Lorenzo B phase), Laguna de los Cerros may even have rivaled San Lorenzo judging from the size of its ceremonial core, its earthen mound architecture, and large corpus of Olmec-style sculptures. The importance of this Formative period center was also highlighted by the discovery of Llano de Jicaro, approximately 7 km northwest of Laguna de los Cerros (Gillespie 1994, 2000). Situated near a major source of basaltic stone, Llano de Jicaro appears to have been a monument workshop with ties to both San Lorenzo Tenochtitlán and Laguna de los Cerros (Borstein 2001: 169-171).

In contrast to these heavily nucleated sites in the southern portions of the Gulf Coast lowlands, smaller populations and more mobile settlement patterns characterized sites located within the Tuxtla Mountains such as La Joya (Arnold 2000) during much of the Formative period. Tres Zapotes, for instance, had a small population during the Early Formative period, but quickly grew into a major regional center on the western fringe of the Tuxtla Mountains through the Middle Formative period (Pool and Ohnersorgen 2003: 24). During this time, Tres Zapotes consisted of eight major mound groups, with numerous Olmec-style monumental sculptures such as colossal heads and stelae (Pool 2010: 102-108). The presence of Stela C with its Long Count date of 32 BC, tenoned busts, and stone boxes decorated with complex volute designs further suggests that Tres Zapotes continued to prosper until the Late Formative and Proto-Classic periods when increased volcanism led to the eventual abandonment of the site (Pool 2010: 116; Pool and Ohnersorgen 2003: 25).

THE MEDIUM: OLMEC-STYLE MONUMENTAL SCULPTURE

Although incised ceramics (Di Castro and Cyphers 2006), hollow "baby-faced" figurines (Blomster 2002) and smaller lapidary works such as greenstone celts (Jaime-Riverón 2010), "votive axes" (Saville 1929a and 1929b) and figurines (Cervantes 1973; Chemin-Bässler 1975; de la Fuente 1983) were common art forms in Olman during the Early and Middle Formative periods, monumental sculpture was the dominant medium for expressions of political ideologies and religious worldviews. These large sculptures also formed the principal medium of pit and groove work in the Gulf Coast. As a way to further contextualize these anthropic markings, it may be instructive to review some of the major types of monumental sculpture in the corpus of Olmec-style art (Coe 1965b: 741-742; Covarrubias 1957: 65; Pool 2007: 106-107; Stirling 1965: 722-738).

Perhaps the best-known type of Olmec-style sculpture is the so-called "colossal head." Ranging in size from approximately 1.5 to 6.5 meters in height and weighing up to 50 tons, the seventeen known colossal heads were throughout the region, from La Venta in the south to Tres Zapotes and Cobata in the north with the greatest number occurring at San Lorenzo (Cyphers 1995a: 45). Each colossal head portrays the face of an individual, possibly a ruler (Grove and Gillespie 1984: 29; Stirling 1965: 721)[1], and is decorated with a variety of ear ornaments and headdresses bearing different symbols and designs, such as feline paws, avian heads, and plain bands (Figure 3.2).

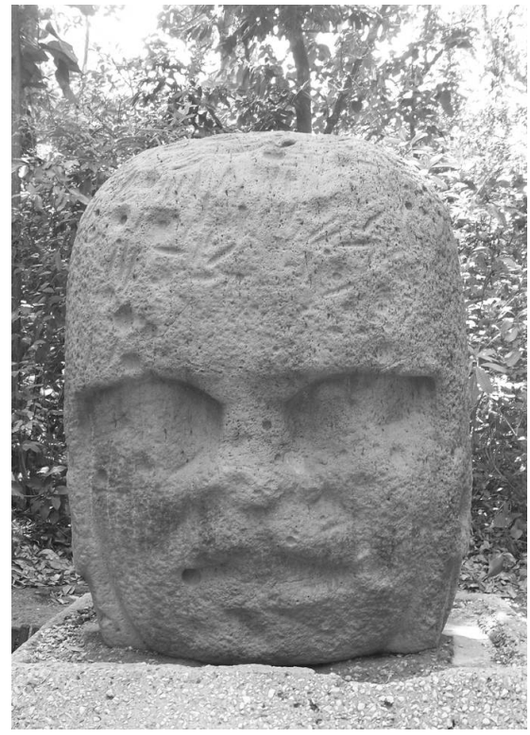

Fig. 3.2 – La Venta Monument 3 (La Venta Park Museum, Villahermosa, Tabasco). Photograph by the author.

Another distinctive type of monumental sculpture associated with Olmec-style art are a group of large, flat-topped carvings often featuring hollowed-out niches with niche figures, side panels with low-relief carvings and upper bands that flared outward like a table (Figure 3.3). Originally thought to be table-top altars (Stirling 1940, 1943), it is now recognized that these sculptures functioned as thrones (Grove 1973; Gillespie 1999).[2]

Sculptures in full round constituted another important type of monumental sculpture. These carved monuments usually depicted rulers in a seated or standing position (Figure 3.4), various zoomorphic figures such as felines, and composite creatures which merged the attributes of two or more living forms (e.g. Cyphers 1997b, 2004; de la Fuente 1977).

Stelae, or flattened slabs featuring low-relief carvings, composed a fourth type of monumental

[1] Claude-François Baudez, by contrast, argued that the colossal heads of the southern Gulf Coast lowlands represented the decapitated heads of sacrificial victims (2012: 15).

[2] Despite this change in outlook, the thrones of La Venta and San Lorenzo are still designated as "altars" in the literature (e.g. de la Fuente 1973; Ochoa and Castro-Leal 1986). Therefore, even though I will sometimes refer to a specific numbered altar from La Venta, it is with the caveat that it was in fact used as a throne and I shall refer to these monuments generically as "thrones".

sculpture in the Olmec-style art of the Gulf Coast lowlands (Figure 3.5). These sculptures were often set upright in plazas, next to mounds, in sunken patios, and other salient areas in the landscape (Porter 1992). Most commonly found at La Venta, some scholars have argued that stelae represent a later development in Olmec-style art (Lowe 1989: 47, 63; Milbrath 1979: 41-42). This change in art forms has sometimes been interpreted as indicating a change in the manner in which elites legitimized their authority. Rather than serving as direct loci of power such as colossal heads and thrones, stelae may represent the use of more indirect forms of legitimation such as propaganda.

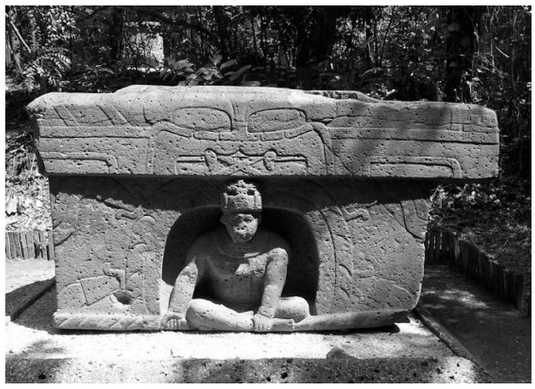

Fig. 3.3 – La Venta Altar 4 (La Venta Park Museum, Villahermosa, Tabasco). Photograph by the author.

Other types of sculpture existed in the southern Gulf Coast lowlands during the Early and Middle Formative periods as well, but were much less common. These included relatively unique objects such as stone benches, stone boxes, sarcophagi, circular altars and flat altars (Cyphers 2004; Ochoa and Castro-Leal 1986; Stirling 1965). Architectural elements, such as columns, steps, tubes, drains and basins were also made of basalt, but have not always been identified as monumental sculptures by archaeologists.[3]

THE TIME FRAME: THE ANTIQUITY OF PIT AND GROOVE WORK ON THE GULF COAST

After their initial discovery and documentation by Matthew Stirling (1940, 1943) at La Venta and later at San Lorenzo (1955), it quickly became apparent that pit and groove work was a relatively common phenomenon in the southern Gulf Coast lowlands and needed explanation. As I have shown in a previous section, numerous explanations have been posited to make sense of these anthropic markings, from axe or celt-sharpening to extraneous decoration, and from magical ritual to internal revolt or iconoclasm.

Fig. 3.4 – San Martín Pajapan Monument 1 (Museum of Anthropology, Xalapa, Veracruz). Photograph by the author.

Early on, it was suggested that those responsible for the pit and groove work were members of a post-Olmec population. Blom and La Farge, for instance, attributed these marks to the use of steel tools by modern populations (1926-1927: 89). For his part, Stirling suggested that the marks were intentionally produced by later peoples attempting to destroy the Olmec-style monuments (1940: 334, 1947: 171). At La Venta, Drucker, Heizer and Squier (1959: 230) echoed these sentiments by arguing that the pits and grooves had been produced by post-Phase IV inhabitants of the site after its decline around 400 BC. Others believed that the grooves in particular were made by later peoples who saw the toppled stone heads of La Venta and San Lorenzo Tenochtitlán as nothing more than convenient "tool-sharpening surfaces" or as the location for intermittent rituals related to the production of stone axes (Clewlow, Cowan, O'Connell and Benemann 1967: 71-72).

In contrast to these early positions, Michael Coe (1965a: 698; 1968a: 86, 1968b: 48) observed that

[3] For example, compare the early work of Drucker, Heizer, and Squier (1959) at La Venta in which monuments as art forms are clearly differentiated from other site features such as basalt columns with more recent surveys of monumental sculptures at both La Venta and San Lorenzo which include plain columns, stone blocks, and aqueducts in their inventories of monuments (see e.g. Clewlow and Corson 1968; Coe and Diehl 1980; Cyphers 2004).

some of the pits were integral parts of the sculptures and that the pit and groove work should therefore be regarded as contemporary with the carving of the Olmec-style monuments during the Early and Middle Formative periods. [4] The recent discovery of the sacred sites of La Merced and El Manatí has also thrown some light on the chronological position of pit and groove work. Both sites are composed of a series of ritual deposits, which provide a complete stratigraphic view of ritual behavior in the southern Gulf Coast. The lowest and earliest deposit – Manatí A is dated to the Early Formative period (1600-1500 BC) and contains numerous undressed stones marked with pits and grooves. At La Merced, a stone with three pit marks was found in the same offering as La Merced Monument 1, an Olmec-style carving. This offering is dated to the end of the Middle Formative period (600-400 BC).

Fig. 3.5 – El Viejón Monument 1 (Museum of Anthropology, Xalapa, Veracruz). Photograph by the author.

Today, there is a consensus among archaeologists that pit and groove work on the Olmec-style monuments of the southern Gulf Coast lowlands were produced during the same time period as the sculptures, i.e. the Early and Middle Formative periods (e.g. Coe and Diehl 1980; Cyphers 2004; Grove 1981; Lowe 1998; Porter 1989; Pohorilenko 2007).

[4] To their credit, Clewlow, Cowan, O'Connell and Benemann (1967: 67) also considered this possibility.

SUMMARY

In summary, this brief overview of archaeological research in the southern Gulf Coast lowlands has demonstrated that it is possible to place the pit and groove work in this region within a broad, but meaningful geographic, cultural, and temporal context. To begin, it appears that pits and grooves were contemporary with the carving of the Olmec-style monuments sometime during the Early and Middle Formative periods (c. 1200-400 BC) although similar activities may have continued into the Late Formative and Early Classic periods (Ladrón de Guevara 2008, 2010). Furthermore, pits and grooves appear on all major types of Olmec-style sculpture, ranging from colossal heads and throne sculptures to stelae and full-round sculptures among others. Given its prevalence in the corpus of Olmec-style art of the Gulf Coast, it is not surprising that such pit and groove work is distributed throughout the southern Gulf Coast region. As I shall show, however, it does appear that pits and grooves are most concentrated among the monuments of the major regional centers of the Formative period, such as San Lorenzo Tenochtitlán and La Venta. In the next section, I shall chart the distribution of pits and grooves in the lowlands and discuss major patterns in their placement on specific monument types.

CHAPTER FOUR - PIT AND GROOVE WORK IN THE FORMATIVE GULF COAST LOWLANDS

In this section, I describe the pit and groove work observed among the Olmec-style monuments of La Venta, San Lorenzo Tenochtitlán, and other Formative period sites located throughout the Gulf Coast lowlands. My discussion is organized geographically rather than by a consideration of the chronological placement of these sites. I will begin with the southernmost Formative period site in the Gulf Coast lowlands with examples of pit and groove work, La Venta.

LA VENTA, TABASCO

Occupying a ridge overlooking a tributary of the Tonalá River, the Middle Formative period (900-400 BC) settlement of La Venta is situated approximately 15 km from the Gulf of Mexico in an area characterized by networks of rivers, streams and lakes. Although settled as early as 1200 BC (Rust and Sharer 1988: 103), at its height during the Middle Formative period, La Venta may have covered as much as 200 ha. The core of this zone featured over 30 earthen mounds and courtyards organized into at least nine different architectural complexes or "plaza groups" (i.e. Complexes A through I). These groups were arranged around a centerline, oriented 8 degrees west of magnetic north, which bisected the core of the settlement (Figure 4.1).

The best known architectural complexes at the site include: Complex A – a series of mounds and plazas to the north of La Venta's Great Pyramid; Complex B – a series of mounds and plazas immediately to the south of the great pyramid; Complex C – a large terrace at the center of the urban core which contained the Great Pyramid (or Mound C-1); Complex D – a set of mounds at the southern edge of the core which, along with Complex I to the far north, constituted one of the formal entrances into the core area; and the Stirling Acropolis – a very large, but irregular earthen platform which may have contained elite residences. Together these architectural groupings form the elite center of La Venta.

The Olmec-Style Monuments of La Venta

The sculptural corpus at La Venta contains a diverse array of monument types, ranging from colossal heads and throne sculptures to full-round sculptures and stelae with low relief carvings. Given its long history of occupation, it is likely that the sculptures of La Venta were created over a long period of time. Indeed, it seems that there was a general transition from the use of Early Formative sculptural forms reminiscent of San Lorenzo, such as colossal heads and thrones, to the creation of stelae with low relief carvings of figures forming part of narrative scenes (Milbrath 1979: 41-42). The most striking manifestation of these Middle Formative period low relief carvings are six celtiform stelae, featuring abstract depictions of maize deities or the earth, which were originally placed along the southern base of Mound C-1, the Great Pyramid (González Lauck 1997; Porter 1992) (Figure 4.3). Many other monumental sculptures at La Venta were also deliberately organized around the landscape (Grove 1999: 265-276; González Lauck 2010: 132-144). For instance, three of the four colossal heads were situated in a cluster north of Complex A; while thrones were arranged near the fourth colossal head south of Mound C-1 or were placed in pairs in front of mounds in Complex D. Finally, near the southern end of the site, on Structure D-7, there is another triad of large sandstone sculptures of squatting figures -- Monuments 52, 53 and 54 -- which mirror the colossal heads at the northern end of the site (Figure 5.1).

The intentional arrangement of sculptures at La Venta suggests that this site could be categorized as a "civic-ceremonial" center in which much of its built landscape was designed as a ritual stage in which rulers and other elites re-enacted creation events through the use of public architecture, massive buried offerings, and sculpture to demarcate important spaces and provide them with meaning.[1] Moreover, the presence of low terraces, packed earth house floors and food storage pits within Complexes E, G, and I suggests that many of these rituals were practiced in front of local residents (González Lauck 1996: 80) and therefore constituted an important avenue through which the elites of La Venta could publicly validate and reinforce their right to rule. As such, it is likely that the pit and groove work found among some of these monuments would also have played a role in such rituals.

Indeed, of the 90 Olmec-style monuments found at La Venta so far, 31 (or 34.4%) of these are characterized by pit and/or groove work. In the subsequent chart (Table 4.1), I summarize some of the basic features of these pit and groove markings and comment on their monumental contexts. Based on the number and type of pit and groove work observed on the monuments of La Venta as well as their location on each of these sculptures, a number of patterns become readily apparent (Figure 4.2).

[1] Some scholars have suggested that La Venta's sculptural groups and mound complexes were organized around grand mytho-poetic narratives linked to a creation story that was similar to the *Popol Vuh* of the Quiché Maya (Reilly 1999, 2002) or based on a "macrobiological" cosmovision linking human growth and development, human reproduction, female shamanism, and agricultural fertility (Tate 2001, 2011).

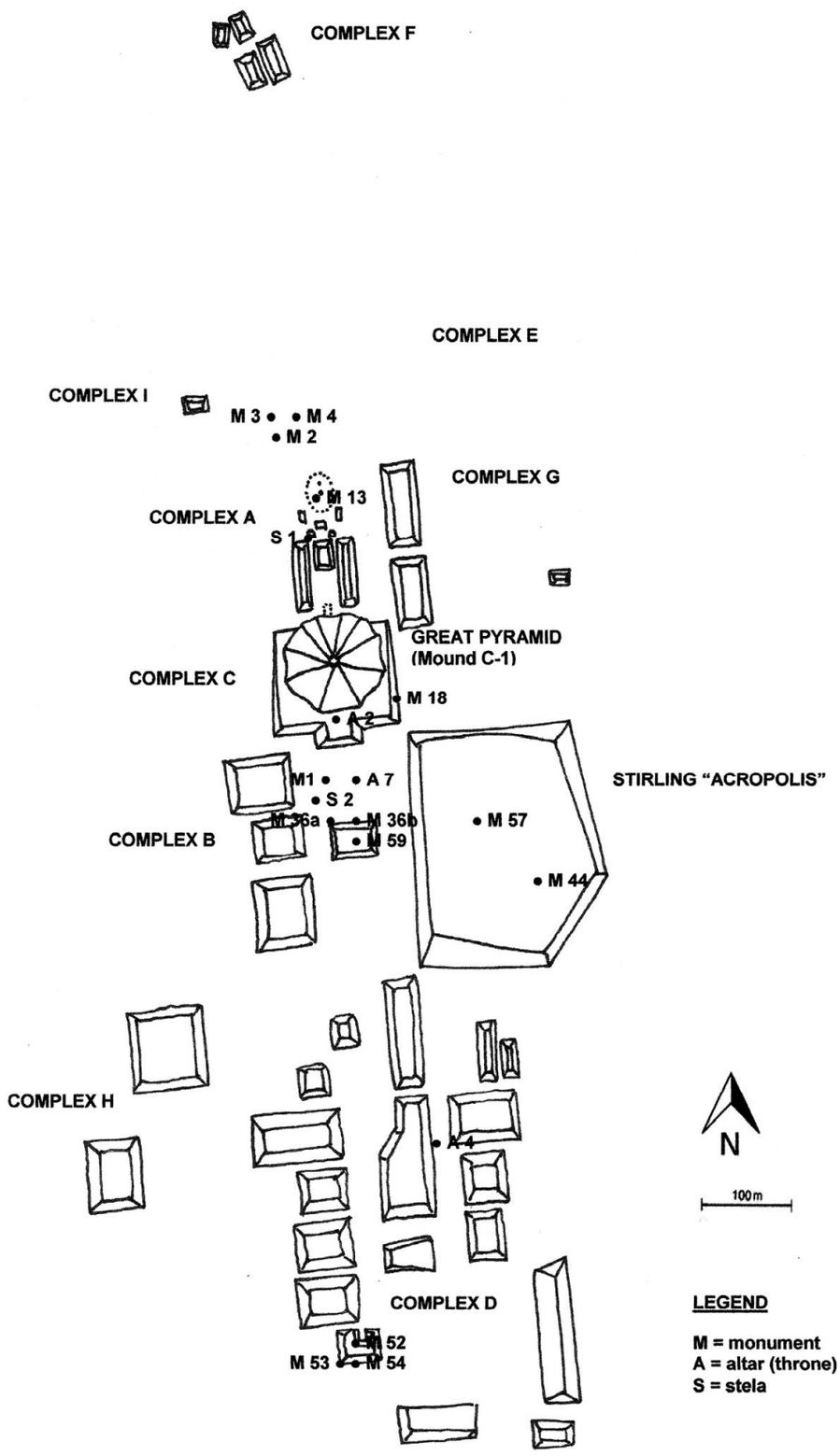

Fig. 4.1 – Map of La Venta, showing its principal plaza groups and the location of monuments with pit and groove work. Drawing by the author (after González Lauck 1996: 74, Fig. 1).

Monument	# of Pits without Dimples	# of Pits with Dimples	# of Grooves	Pit and Groove Combination	Location on the Monument	Type of Monument	Current Location
Altar 2	0	0	1	No	Front	Throne	LVP
Altar 4	1	0	0	No	Front	Throne	LVP
Altar 7	6	0	29	Yes	Superior	Throne	LVP
Altar 8	16	0	75+	Yes	Superior / right profile	Throne	LVSM
Stela 1	0	0	1	No	Posterior	Stela	LVP
Stela 2	4	0	0	No	Right profile	Stela	LVP
Stela 4	8	0	97	Yes	Base	Stela	------
Monument 1	13	0	48	Yes	Superior	Colossal Head	LVP
Monument 2	48	0	58	Yes	Superior / posterior	Colossal Head	RMA
Monument 3	56	18	140	Yes	Superior / front / left profile	Colossal Head	LVP
Monument 4	27	0	48	Yes	Superior / left profile / right profile	Colossal Head	LVP
Monument 13	10	0	17	Yes	Superior / left profile	Columnar Sculpture	LVP
Monument 18	1	1	0	Yes	Front	Full-Round Sculpture (fragment)	------
Monument 32	1	1	0	No	Front	Column	LVP
Monument 36a	0	0	32	No	Front	Undressed Stone	------
Monument 36b	0	0	27	No	Front	Undressed Stone	------
Monument 44	0	0	2	No	Superior	Full-Round Sculpture (fragment)	RMA
Monument 47	0	0	8	No	Front	Plain Stela	LVP
Monument 52	13	0	14	Yes	Right profile	Full-Round Sculpture	LVSM
Monument 53	0	0	3	No	Right profile	Full-Round Sculpture	LVSM
Monument 54	1	0	19	Yes	Front / left profile	Full-Round Sculpture	LVSM
Monument 57	0	0	10	No	Front	Full-Round Sculpture (fragment)	------
Monument 59	10	0	36	Yes	Superior	Bench	LVP
Monument 62	0	0	23	No	All facets	Column	LVP
Monument 63	3	0	32	Yes	Left profile	Stela	LVP
Monument 67	0	0	1	No	Front	Bench?	LVP
Monument 68	4	0	78+	Yes	Front	Colossal Head	LVP
Monument 69	0	0	2	No	Front	Stela (fragment)	RMA
Monument 78	0	0	2	No	Front / right profile	Full-Round Sculpture	LVP
Unnumbered Monument	3	0	2	Yes	Front	Stela (fragment)	LVP
Unnumbered Bench	2	0	26	Yes	Superior	Bench	LVSM

Table 4.1 – Monuments with Pits and/or Grooves from La Venta, Tabasco (Location acronyms: LVP = La Venta Park Museum in Villahermosa, Tabasco; LVSM = La Venta Site Museum in La Venta, Tabasco; RMA = Regional Museum of Anthropology Carlos Pellicer Cámara in Villahermosa, Tabasco; ------ = current location unknown).

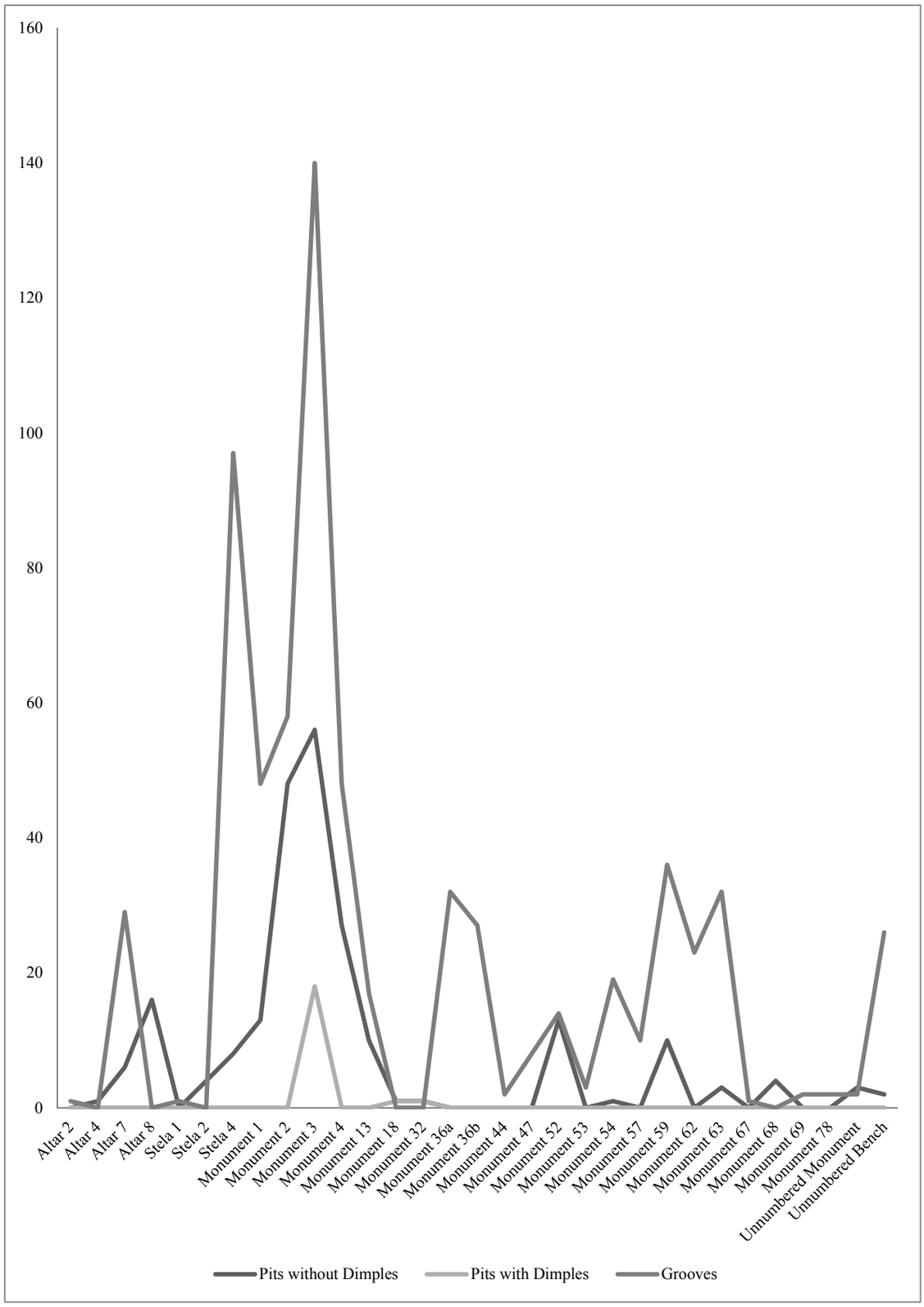

Fig. 4.2 – Number of Different Types of Pit and Groove Work on the Olmec-Style Monuments from La Venta, Tabasco.

First, pits and grooves are not confined to a particular type of monument. These markings appear on several different types of sculpture, ranging from colossal heads and thrones to stelae with low relief carvings and full-round sculptures.

Fig. 4.3 – The Great Pyramid (Mound C-1) of La Venta. Photograph by the author.

The only exception to this observed pattern revolves around the colossal heads. All four of La Venta's colossal heads (i.e. Monuments 1-4) (Figure 3.2) contain pit and groove work, as well as a fifth, possibly unfinished colossal head (Monument 68) (Figure 4.4). Second, the greatest concentration of both pits and grooves occurs on only a few monument types, i.e. colossal heads (Monuments 1-4 and 68), benches (Monument 59, Monument 67, and an unnumbered monument from the La Venta Site Museum), and some of the thrones (Altars 4, 7 and 8) (Figure 3.3 and Figure 6.4). All three sculptural types have been associated with the expression of rulership either as iconic portraits of rulers (i.e. the colossal heads) or literal seats of power (i.e. the thrones and benches). While this pattern in the amount of pit and groove work by monument type at La Venta appears to contradict Baudez's recent hypothesis regarding monument mutilation in Olmec-style art, especially the colossal heads (2012: 21), there seems to be an important relationship between pit and groove work and some monumental representations of elite power which requires explanation, possibly involving some form of iconoclasm or ritual termination. Finally, the stelae and full-round sculptures display the fewest number of pits and/or grooves. For some of the monuments, this pattern may be explained by their current fragmentary nature (e.g. Monument 18); for others, it may be that the depiction of narrative scenes and animal figures on these sculptures did not lend itself as easily to the cultural practices associated with the production of pits and/or grooves.

Interestingly, many of the sculptures also seem to share a common pattern in terms of the distribution of pits and/or grooves on their respective surfaces. Fifteen of the 31 sculptures (48.4%) were characterized by pit and groove work on their frontal (i.e. carved) facets. A slightly smaller percentage had such markings on their left and/or right profiles (i.e. 35.5%); while nine out of 31 (29%) had some form of pitting and grooving on their superior facets. By contrast, only three out of 31 (9.6%) had pits and/or grooves on their posterior or dorsal facets, while only one out of 31 (3.2%) had such markings on its base. Given these patterns of distribution, it seems plausible that ease of access, the biomechanics of pit and/or groove production, as well as the nature of the original carving may have played important roles in the placement of pits and grooves on the monuments of La Venta.

Fig. 4.4 – La Venta Monument 68 (La Venta Park Museum, Villahermosa, Tabasco). Photograph by the author.

SAN LORENZO TENOCHTITLÁN, VERACRUZ

In its heyday, San Lorenzo Tenochtitlán was one of the largest regional centers in Early Formative Mesoamerica (1400-900 BC). Located on a long ridge rising above the surrounding riverine lowlands of the Coatzacoalcos River, this site is 60 km from the Gulf Coast. Although artificial ridges and mounds are present at the site, unlike La Venta, San Lorenzo Tenochtitlán does not appear to have had public architecture consisting of mound plaza groups.[2] In fact, the greater San Lorenzo habitation

[2] This apparent architectural pattern may reflect the designs of the Middle Formative peoples who inhabited San Lorenzo, extensive modification by the site's Villa Alta phase inhabitants,

zone consisted of several diffuse subsidiary centers, e.g. Loma del Zapote and Potrero Nuevo, characterized by houses situated on low platforms, artificial depressions or "lagunas", and small ceremonial areas featuring sculpted scenes – i.e. multi-monument tableaus creating a narrative (Cyphers 1997a: 106-108). There is also evidence that the landscape around San Lorenzo Tenochtitlán was significantly modified through the creation of massive agricultural terraces, causeways and dikes (Coe and Diehl 1980: 297; Cyphers 1997a: 112-113), and artificial water channels or drains encased in U-shaped basalt stones (e.g. Cyphers 2004: 208, Fig. 143).[3]

The central core, by contrast, was surrounded by a densely populated residential zone and stone workshops, each sitting on its own set of platforms (Cyphers 1997b: 180-184). The interior of the urban core was comprised of a large, open plaza consisting of three courts (i.e. the North, Central and South Courts) surrounded by low mounds and dotted with clusters of stone sculptures extending along a north-south axis (Figure 4.5).

The Olmec-Style Monuments of San Lorenzo

In contrast to La Venta, the sculptural corpus at San Lorenzo is dominated by at least three distinct types of monuments, i.e. colossal heads, thrones, and full-round sculptures depicting animals, humans, and human-jaguar composite creatures in high relief. Other forms of monumental sculpture are present (e.g. stone boxes and columns), but there are very few stelae. As noted above, the monuments of San Lorenzo were intentionally arranged in clusters throughout the site's central core (Grove 1999: 276-281). The clusters found along the main plaza and its formal courts consisted of north-south arrangements of monuments such as colossal heads and thrones, creating a ritual processional way commemorating both individual living rulers and their ancestors.

By contrast, full-round sculptures seem to have been placed along the periphery of this central plaza area in areas linked with elite habitation, such as the so-called "Red Palace" which featured basalt columns for support and walls plastered in sand and later stained by hematite (Cyphers 1997a: 101). As such, it appears that the entire plateau upon which the core of San Lorenzo rests was the location of royal rituals and political ceremonies. As with La Venta, this general pattern suggests that the pit and groove work found among the monuments of San Lorenzo would also have had an important role in the creation of elite identities at the site. Interestingly, a smaller percentage (approximately 16%) of the site's monuments served as the loci for the production of pits and grooves than at La Venta. Of the 134 Olmec-style monuments found at San Lorenzo so far (Cyphers 2004), only 22 of these are characterized by pit and/or groove work. The basic features of these markings and their monumental contexts are summarized in Table 4.2.

After examining the number and type of pit and groove work found among the monuments of San Lorenzo as well as their location on each of these sculptures, a number of patterns become readily apparent (Figure 4.6). First, pits and grooves are most abundant among two classes of monuments at the site, the colossal heads (Monuments 1-5, 17, 53, 61, 66, and 89) (Figure 4.8) and some of the thrones (Monuments 14 and 20) (Figure 4.9). Like the pit and groove work at La Venta, this pattern appears again to contradict Baudez's hypothesis concerning the purported lack of mutilation on Olmec-style colossal heads (2012: 21). The remaining monuments with these markings consist of an oval stone with a low relief carving (Monument 112), a sculpture in full round (Monument 6) (Figure 6.3), a column (Monument 114), a plain stela (Monument 23) and several undressed boulders (Monuments 19, 50, and 63) among others. Like La Venta, it appears that pit and groove work is concentrated among monument types associated most closely with the expression of rulership either as iconic representations of rulers (i.e. the colossal heads) or indexical references to the power of rulers (i.e. thrones). Second, it appears pits (both with and without dimples) are the most common form of marking among the colossal heads; while grooves are more frequent than pits on undressed stones (Monument 63), the carved round stone (Monument 64) and the oval stone with a low relief carving (Monument 112). Finally, the data suggest that architectural features such as columns (i.e. Monument 114) have the fewest instances of pitting and grooving.

As was the case in La Venta, many of the sculptures at San Lorenzo share a common pattern in terms of the distribution of pits and/or grooves on their respective surfaces. Twelve of the 22 sculptures (54.5%) were characterized by pit and groove work on their frontal facets. And nine out of the 22 monuments (41%) had such markings on their left and/or right profiles; while seven out of 22 (31.8%) had some form of pitting and grooving on their posterior facets. In comparison, only a small number of monuments, i.e. five out of 22 (22.7%), had pits and/or grooves on their superior facets.

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or alterations due to farming in the vicinity of the archaeological zone in the intervening centuries.

[3] These features were occasionally linked to carved basins and may have been part of a ritual water management system (Cyphers and Zurita-Noguera 2006).

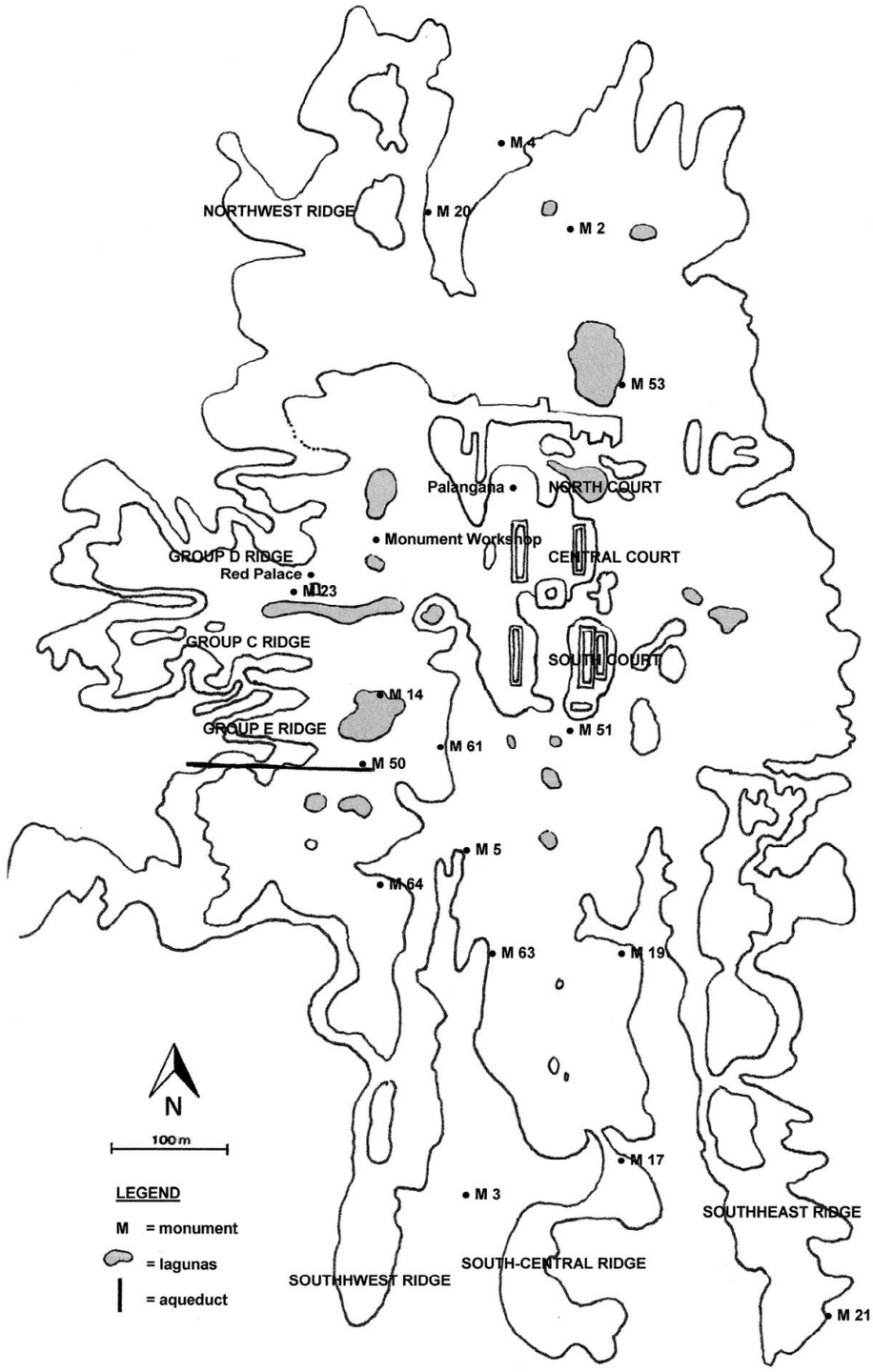


Fig. 4.5 – Map of San Lorenzo Tenochtitlán, showing its principal ridge groups and courts as well as the location of monuments with pit and groove work. Drawing by the author (after Coe and Diehl 1980: Map 2).

Monument	# of Pits without Dimples	# of Pits with Dimples	# of Grooves	Pit and Groove Combination	Location on the Monument	Type of Monument	Current Location
Monument 1 (Colossal Head 1)	0	4	4	Yes	Front / left profile	Colossal Head	MAX
Monument 2 (Colossal Head 2)	11	70	9	Yes	Front / left profile / right profile	Colossal Head	NMA
Monument 3 (Colossal Head 3)	0	28	1	Yes	Front / left profile / posterior	Colossal Head	MAX
Monument 4 (Colossal Head 4)	0	27	7	Yes	Posterior	Colossal Head	MAX
Monument 5 (Colossal Head 5)	0	8	2	Yes	Front	Colossal Head	MAX
Monument 17 (Colossal Head 6)	0	5	2	Yes	Front / right profile / posterior	Colossal Head	NMA
Monument 53 (Colossal Head 7)	0	23	15	Yes	Front	Colossal Head	MAX
Monument 61 (Colossal Head 8)	1	4	4	Yes	Front / left profile	Colossal Head	MAX
Monument 66 (Colossal Head 9)	4	15	2	Yes	Front / left profile / right profile / posterior	Colossal Head	MAX
Monument 89 (Colossal Head 10)	0	1	0	No	Front	Colossal Head	SLSM
Monument 6	0	0	1	No	Left profile	Full-Round Sculpture	MAX
Monument 14	2	0	7	Yes	Superior	Throne	MAX
Monument 19	19	0	3	Yes	Front	Undressed Boulder	SLT
Monument 20	10	0	10	Yes	Superior / posterior / right profile	Throne	SLSM
Monument 21	19	0	7	Yes	Superior	Carved Basin	NMA
Monument 23	2	0	0	No	Front	Plain Stela	SLT
Monument 50	2	0	4	Yes	Interior / exterior	Undressed Boulder	SLT
Monument 51	4	0	33	Yes	Superior	Rectangular Slab	SLT
Monument 63	0	0	35	No	Superior	Undressed Boulder	SLT
Monument 64	14	0	26	Yes	Superior	Carved Round Stone	SLT
Monument 112	6	0	102	Yes	Posterior	Oval Stone with Low Relief	SLSM
Monument 114	2	0	0	No	Front / posterior	Column	SLT

Table 4.2 – Monuments with Pits and/or Grooves from San Lorenzo Tenochtitlán, Veracruz (Location acronyms: NMA = National Museum of Anthropology in Mexico City; SLT = San Lorenzo Tenochtitlán archaeological site; SLSM = San Lorenzo Site Museum in Tenochtitlán, Veracruz; MAX = Museum of Anthropology in Xalapa, Veracruz).

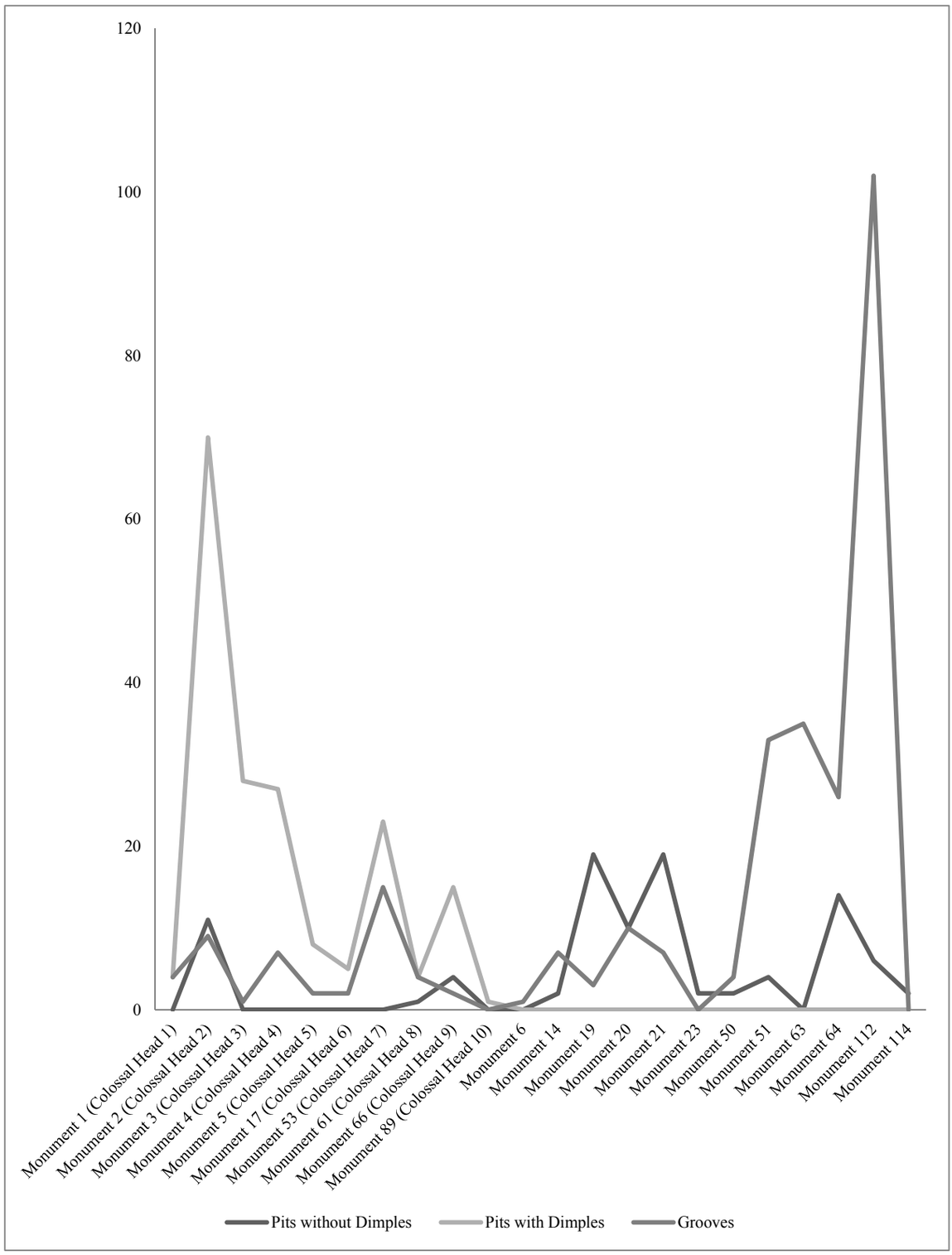


Fig. 4.6 – Number of Different Types of Pit and Groove Work on the Olmec-Style Monuments from San Lorenzo Tenochtitlán, Veracruz.

Monument	# of Pits without Dimples	# of Pits with Dimples	# of Grooves	Pit and Groove Combination	Location on the Monument	Type of Monument	Current Location
El Viejón Monument 1	9	0	0	No	Front / posterior	Stela	MAX
Angel R. Cabada Monument 1	1	0	1	Yes	Left profile	Stela	MAX
Llano de Jicaro Monument 8	0	0	1	No	Posterior	Full-Round Sculpture	MAX
Tres Zapotes Stela F	2	0	0	No	Front	Stela	TZM
Alvarado Stela	1	0	0	No	Front / right profile	Stela	NMA

Table 4.3 – Miscellaneous Monuments with Pits and/or Grooves from the Formative Gulf Coast (Location acronyms: NMA = National Museum of Anthropology in Mexico City; MAX = Museum of Anthropology in Xalapa, Veracruz; TZM = Tres Zapotes Museum in Tres Zapotes, Veracruz).

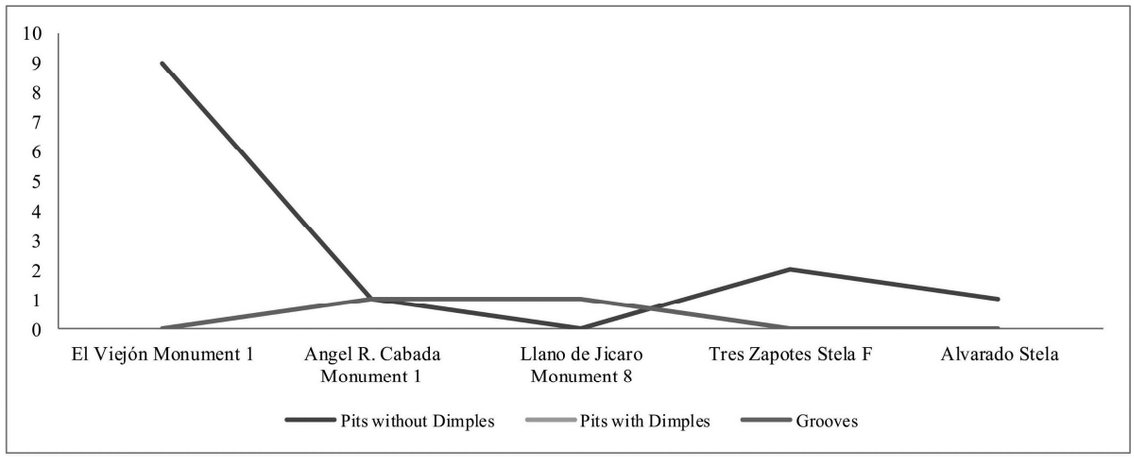


Fig. 4.7 – Number of Different Types of Pit and Groove Work on Miscellaneous Monuments from the Formative Gulf Coast.

Monument Types with Pits and/or Grooves	Number (#)	Percentage (%)
Thrones	6	10.34%
Basins	1	1.72%
Benches	3	5.17%
Circular or Rectangular Slabs	2	3.44%
Colossal Heads	15	25.86%
Columnar Sculptures and Columns	4	6.89%
Full-Round Sculptures	9	15.51%
Stelae	10	17.24%
Plain Stelae	2	3.44%
Oval Stones with Low-Reliefs	1	1.72%
Undressed Stones	5	8.62%
TOTAL	n = 58	100.00%

Table 4.4 – Types of Olmec-style Monuments from the Formative Gulf Coast Lowlands with Pit and/or Groove Work.

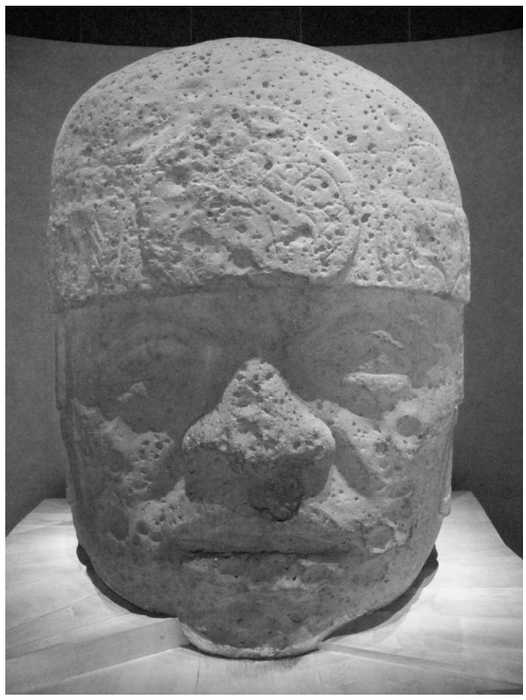


Fig. 4.8 – San Lorenzo Monument 2 (Colossal Head 2) (National Museum of Anthropology, Mexico City). Photograph by the author.

Fig. 4.9 – San Lorenzo Monument 14 (Museum of Anthropology, Xalapa, Veracruz). Photograph by the author.

MISCELLANEOUS MONUMENTS FROM THE GULF COAST LOWLANDS

Outside of the contexts of La Venta and San Lorenzo Tenochtitlán, five monuments have been found with pit and/or groove work. These monuments come from archaeological zones as widespread as El Viejón (Figure 3.5) and Llano de Jícaro. An examination of the Olmec-style monuments from Tres Zapotes and Cobata on display at the Tres Zapotes Museum, the Regional Museum of San Andrés Tuxtla, the Tuxteco Museum at Santiago Tuxtla, and the central plaza of Santiago Tuxtla revealed only one obvious example of pit and groove work on these monuments, Tres Zapotes Stela F (Figure 4.10).

This observation was coroborated by a review of the literature on the monuments of Tres Zapotes (i.e. Clewlow, Cowan, O'Connell and Benemann 1967: 29-32; de la Fuente 1973: 280-309; Pool 2010: 101-122; Stirling 1943: 11-25). There may be several reasons for the noticeable lack of pit and groove work among the monuments of Tres Zapotes. Primary among these is the relative dearth of Olmec-style monuments at the site – i.e. only Monuments A and Q (colossal heads) (Figure 4.11), Stelae A and F, and Monuments H, I, M, G, R, 33, and 37 probably date to the Middle Formative period -- because Tres Zapotes flourished principally during the Late Formative period, 400 BC – AD 100 (Pool and Ohnersorgen 2003: 24-25; Pool 2010: 106-109).

In the Table 4.3, I summarize the distribution of the pits and grooves as well as their placement on the monuments from outside of La Venta and San Lorenzo. The number and type of pit and groove work on these monuments is described in Figure 4.6. Based upon these observations, it is clear that the pattern of pit and groove work on these monuments corresponds to that established at La Venta and San Lorenzo. The monuments contain relatively few of these markings as should be expected from their classification as stelae and full-round sculptures. Likewise, none of these sculptures is characterized by the presence of pits and/or grooves on their superior facets. All of these marks occur either on their front facets, left or right profiles, or posterior facets. In addition, the general paucity of pit and groove work among some of these monuments may be due to their chronological placement within the Late Formative period (Cervantes 1976: 22; Parsons 1981: 263, 1986: 16-17). As such, these monuments may record the last vestiges of the practice of making pits and grooves on monuments in the southern Gulf Coast lowlands.

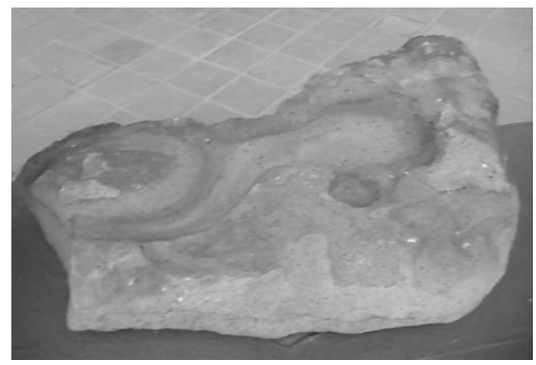


Fig. 4.10 – Tres Zapotes Stela F (Tres Zapotes Museum, Tres Zapotes, Veracruz). Photograph courtesy of Richard McLain.

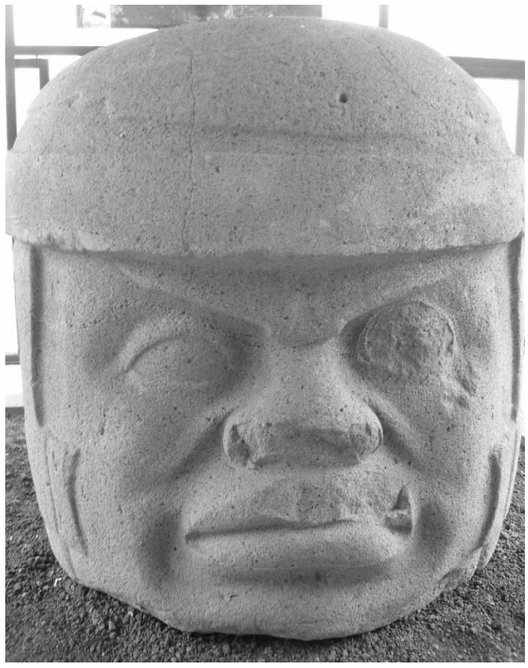


Fig. 4.11 – Tres Zapotes Monument A (Tres Zapotes Museum, Tres Zapotes, Veracruz). Photograph courtesy of Richard McLain.

In terms of their general distribution and patterning on the surface of Olmec-style monuments, grooves tend to be placed in parallel groupings, although no complex patterns of groove work -- such as geometric shapes, cross-hatching, or biomorphic images – have been observed on the monuments. Hemispherical pits, by contrast, differ in their patterning by type. Hemispherical pits with dimples tend to be larger (i.e. 8-30 cm in diameter) and are clustered into groups of two to seven and were sometimes superimposed on top of other pits with dimples. At San Lorenzo, hemispherical pits with dimples were found solely on the colossal heads, almost to the exclusion of pits without dimples. By contrast, pits with dimples at La Venta appeared only on one colossal head (i.e. La Venta Monument 3) and two other monuments – a column (La Venta Monument 32) and a sculpture fragment (La Venta Monument 18). This unusual pattern suggests that there may have been special significance attached to pits with dimples relative to the colossal heads and that this practice existed primarily during the Early Formative period at San Lorenzo Tenochtitlán.

Hemispherical pits without dimples, on the other hand, tend to have smaller diameters (i.e. 2-11 cm) and occur singly or, more rarely, in groups organized in linear arrangements, triadic clusters, or in dyads. However, there does not appear to be a repetitive pattern in the arrangement of pits and grooves as seen in the Classic period pecked crosses and squares associated with Teotihuacán and other sites around Mesoamerica (Aveni, Hartung and Buckingham 1978). Unlike dimpled pits, these markings occur with greater frequency on many types of monuments, including thrones, colossal heads, full-round sculptures, and even undressed boulders at La Venta, San Lorenzo, and Tres Zapotes. As such, hemispherical pits without dimples appear to have been the primary form of pitting on Olmec-style monuments.

Taken together, the general lack of consistent structural patterns in the placement of pits and grooves on the Olmec-style monuments of the Gulf Coast suggests that these markings did not form part of a nascent writing system or record-keeping system. However, these observations do not eliminate the possibility of some other semasiographic function for these markings, particularly the pits with dimples.

DISCUSSION

The analysis of the main features and the patterning of the pit and groove work observed among the Olmec-style monuments of the Gulf Coast lowlands clearly shows that these anthropic markings were not used as a form of symbolic communication or a writing system even though the possibility of a general representation of meaning could not be dismissed from the data at hand. Moreover, the use of pits and grooves on undressed stones, monuments that have been re-carved and monuments that have not been modified suggests that these markings were also not an essential part of the well-known practice of monument re-carving on the Gulf Coast. The presence of these markings on a fraction of the sculptures known at the sites of San Lorenzo Tenochtitlán and La Venta also shows that pits and grooves were not an essential part of the initial monument production process (Table 4.4). Indeed, these markings are superimposed on top of the carved surfaces of the full-round sculptures and colossal heads.

Moreover, the location of the pits and grooves on these monuments strongly suggests that they were produced within a peri-depositional context of re-use and repositioning. First, the pits and grooves located on the superior and elevated portions of larger monuments, such as colossal heads, stelae, and thrones would have been most easily accomplished when the monuments were in a toppled or partially buried state. Second, the pits and grooves located on thrones and benches are often found on their superior surfaces, indicating that these monuments were no longer being used for their original purpose. What, then, accounts for the existence of pits and grooves on the monuments of the Formative Gulf Coast? What was the significance of these markings? I suggest that the massive sacred offerings found at La Merced and El Manatí can provide crucial clues to identifying

the cultural practices associated with pit and groove work in the greater Gulf Coast lowlands.

CLUES FROM THE SACRED SPRINGS OF EL MANATÍ AND LA MERCED, VERACRUZ

Both of these sites are located in the swampy environs of Cerro Manatí and the Cahuapa river, southeast of the San Lorenzo archaeological zone (Rodríguez and Ortíz Ceballos 2000: 156, Fig.1). The El Manatí spring contained a number of cultural materials – greenstone axes, stone mortars, wooden busts, ceramics, and rubber balls – that were deposited in various layers over time. Many were arranged in distinctive east-west linear groupings and cruciform patterns, indicating that their patterning in the spring held some significance. The bottom of the spring also contained a petroform consisting of sandstone boulders arranged along a north-south axis. At least twelve of these stones showed signs of human modification, including ground pits and grooves that were likely created prior to the placement of the stones in the spring (Ortíz Ceballos and Rodríguez 1989: 32-33, 1999a: 109; Ortíz Ceballos, Rodríguez and Delgado 1997: 45, 52; Rodríguez and Ortíz Ceballos 2000: 75).

Although the offerings at nearby La Merced also occurred in layers deposited over a long period of time beginning with a deposit containing Early Formative period domestic refuse, they appear to follow a slightly different pattern than those at El Manatí. A second layer containing ceramics, gravel, clays and sand was positioned on top of the domestic remains, followed by a third layer containing greenstone and limestone axes. The final and uppermost deposit contained a few axes as well as some undressed stones containing pits and/or grooves (Rodríguez and Ortíz Ceballos 2000: 163).

Both Rodríguez and Ortíz Ceballos (2000: 83-84; Ortíz Ceballos and Rodríguez 1997: 93) postulate that the location of these offerings near three natural features – a hill, a spring, and a source of ferrous pigments like hematite – may have had a special significance to the area's Early Formative period (c. 1600 BC) inhabitants. The use of greenstone axes near water sources additionally indicates that the offerings were deposited as part of rituals associated with agricultural fertility or rainfall (Rodríguez and Ortíz Ceballos 2000: 163). Both of these sites also show evidence that stones with pits and/or grooves may have been the by-products of the ritual investiture of "power" from sacred sites onto portable ground-stone objects such as celts and axes.[4] Similar ritual practices in Polynesia suggest that objects attributed with "mana" usually did so in reference to chiefs or ancestors (Keesing 1984: 148), opening the possibility that the ritual investing of power onto objects not only involved notions of a scared landscape, but also the embodiment of ancestral power.[5] Returning to the two major Formative period Gulf Coast sites featuring monuments with pit and groove work, it is interesting to note that the ritual burial and caching of objects was practiced widely within the central cores of both La Venta and San Lorenzo.

At La Venta, a number of different features and objects were ritually buried. Five formal tombs were integrated into the public architecture of Complex A by being buried underneath its mounds (Wedel 1952: 35, Fig.14) (Figure 4.1). Tombs A, B, and E were found beneath Mound A-2; while Tomb C was located under Mound A-3 and Tomb D was situated slightly to the west of Mound A-3. With the exception of Tomb D, all of these funerary deposits were characterized by formal structures – e.g. the walls and roof of Tomb A were constructed from natural basalt columns (Drucker 1952: 62-63); while Tomb B contained a sandstone sarcophagus with a carved depiction of an alligator (Drucker 1952: 78). In all cases, these burials were accompanied by funerary offerings that included jadeite ornaments, greenstone celts, or deposits of red cinnabar and clay. The rich offerings and privileged location of these burials strongly suggests that they housed deceased rulers.

In addition to the rich funerary structures of Complex A, numerous caches were found in this area and consisted of massive offerings containing mosaic masks and small dedicatory offerings. Typical of the former category is Massive Offering 1, a large rectangular pit containing 28 layers of serpentine blocks surrounded with specially selected olive and blue clay (Drucker, Heizer and Squier 1959: 80-101). On top of this offering lay a mosaic mask (Pavement 3) of greenstone blocks, measuring 4.8 m x 4.4 m and depicting an abstract zoomorphic face. The mottled pink clay layered above this mosaic also contained a small dedicatory offering of jadeite and serpentine celts arranged in a cruciform pattern with a small iron-ore mirror. The smaller offerings also provide us with clues about the effort extended in the creation of these buried caches. Small Dedicatory Offering 4, for instance, is located in the plaza west of Mound A-1 and contained a detailed ritual scene created through the careful placement of several greenstone

[4] The use of celts and axes, particularly those that were incised with imagery and/or made of exotic materials such as greenstone or serpentine, in large burial offerings in the Gulf Coast lowlands (see Drucker, Heizer and Squier 1959; Reilly 1995) suggests that Formative period elites were the main recipients of this "power."

[5] David Stuart has recently made a similar case for the materialization of animate power among the Formative and Classic period stelae in the Maya lowlands (2010: 286-296). Interestingly, similar engagements between history (or social memory), material objects, and group identity characterize house-based societies (see Joyce 2000; Hendon 2007).

figurines, one sandstone figurine, and numerous celts (Drucker, Heizer and Squier 1959: 152-161). All of the figurines appear to have been well used before being buried and the cache appears to have been opened at least once during the Middle Formative period and the resulting pit refilled with remnants of the floor that had been placed above the cache.

At San Lorenzo, similar forms of caching and ritual burial are also evident. Within the Group C, D, and E Ridges – located to the west of the main plaza and near the Red Palace, over 50 Olmec-style monuments have been found (Cyphers 1997b: 180-184) (Figure 4.5). Some were situated on top of offerings containing ceramics, sacrificed animals, and human infants. Others appear to have been stockpiled near the Red Palace, suggesting that it was a monument recycling workshop, although some appear to have been at least partially buried in this area. In the Group E Ridge, Monument 61 (a colossal head) and Monument 14 (a throne, see Figure 4.9) were found in close association with an artificial channel, suggesting that these monuments were part of rituals of rulership linked to the control of water (Cyphers 1999: 158-162). Significantly, Monument 61 appears to have been deliberately toppled, possibly after the demise of the ruler it portrayed. Taken together, the evidence for ritual burial as a widespread practice in the Formative Gulf Coast lowlands (Magni 2000) and its close association with pit and groove work at El Manatí and La Merced, suggest that a re-examination of the contexts of Olmec-style monuments containing pits and grooves is in order, especially in regard to the evidence for the ritual burial of these sculptures and undressed stones.

CHAPTER FIVE - DEPOSITIONAL CONTEXTS OF OLMEC-STYLE MONUMENTS WITH PIT AND GROOVE WORK

Although several scholars have reasoned that the monuments of La Venta and San Lorenzo were found in approximately the same areas in which they were originally erected (Clewlow, Cowan, O'Connell and Benemann 1967: 73-83; Grove 1999: 257), this hypothesis does not preclude the possibility that some of these monuments were re-used and possibly ritually buried.[1] However, the disposal of these monuments near the places in which they stood erect may have played an important part in termination ceremonies linked to the end of a particular ruler's reign or, as seen in El Manatí, in rituals associated with sacred places. It is therefore necessary to review the evidence gathered regarding the depositional contexts of these monuments as detailed in various excavation reports for La Venta and San Lorenzo. Details about their final placements (i.e. contexts of discovery) combined with a comparison of the structure of these contexts and those from accepted examples of ritual burial and disposal can offer valuable hints about the cultural practices that led to the final placement of the monuments containing pit and groove work. I begin by detailing the evidence from La Venta regarding the specific depositional contexts of its monuments with pits and/or grooves.

DEPOSITIONAL CONTEXTS OF THE LA VENTA MONUMENTS

Given the different types of monuments displaying pit and groove work at La Venta, their depositional contexts are most easily discussed in terms of different types of activities. In Table 5.1, I describe each monument in terms of whether it was discovered in a buried and/or toppled state as well as in association with caches or offerings. In cases where more detailed information about these contexts and activities were available, references were noted.

In all cases where contextual information was available, the monuments of La Venta exhibiting pit and groove work seem to have been either partially buried or toppled. In one instance, Altar 4 (Figure 3.3), these activities coincided with caching as well. Further confirming the antiquity of pit and groove work on the Olmec-style monuments of the Gulf Coast, detailed stratigraphic studies around Monuments 13 and 53 indicate that these activities may have taken place during the Middle Formative period and not by later visitors to the site (Gallegos Gómora 1990: 21-23) (Figure 5.1).

[1] Since the stones for the basalt monuments were transported from the Tuxtlas (Coe and Diehl 1980: 295-297), it is possible that the monuments were also re-positioned prior to deposition.

Moreover, Olmec-style monuments with pit and groove work appear to have been distributed throughout the central core of La Venta (Figure 4.1). This spatial pattern suggests that these monuments were buried, toppled, and marked with pits and grooves close to where they had been positioned prior to these acts, although it is not possible to say whether these places constituted the primary contexts oft these monuments. Given the wide spatial distribution of monuments with pits and grooves, it is also unlikely that these anthropic markings were produced as part of a coordinated monument recycling program at La Venta.

Fig. 5.1 – La Venta Monument 53 (La Venta Site Museum. La venta, Tabasco). Photograph by the author.

DEPOSITIONAL CONTEXTS OF THE SAN LORENZO MONUMENTS

Like the monuments of La Venta, the contextual information derived from the sculptures of San Lorenzo is sometimes fragmentary and often complex. I therefore address the available information in terms of the same types of activities discussed for the La Venta monuments, i.e. burial, toppling, and caching (Table 5.2). Whenever possible, additional details and references were also noted. In contrast to La Venta, most of the monuments at San Lorenzo were found during the course of systematic excavations. As a result, much

Monument	Buried?	Toppled?	Associated with Caching?	Notes and References
Altar 2	No	Toppled	No	Blom and La Farge 1926-1927:86 (Fig. 73); Stirling 1943:53 (Plate 38c)
Altar 4	Partially	Toppled	Yes	Blom and La Farge 1926-1927:88 (Figs. 77-78); Stirling 1943:55; cache contained jade and amethyst beads, possibly from a necklace and two bracelets
Altar 7	Partially	No	No	Drucker 1952 (Plate 65)
Altar 8	NDA	NDA	NDA	González Lauck 1988:154 (Fig. 4)
Stela 1	Partially	Toppled	No	Joyce and Knox 1931 (Fig. 3); Stirling 1943:50; found lying face up
Stela 2	Partially	Toppled	No	Stirling 1943:51 (Plate 34)
Stela 4	Fully	NDA	No	Stirling 1943:52 (Plates 33c and 33d); González Lauck 1988:153
Monument 1	Partially	No	No	Blom and La Farge 1926-1927:87 (Fig. 76); Stirling 1943 (Plate 42a)
Monument 2	Partially	NDA	No	Stirling 1943 (Plate 43)
Monument 3	No	Toppled	No	Stirling 1943 (Plate 42b)
Monument 4	Partially	No	No	Stirling 1943 (Plate 44)
Monument 13	Partially	No	No	Drucker 1952:39; situated on top of the red clay core which sloped from Mound A-2 and was then partially covered with a sand floor
Monument 18	NDA	NDA	NDA	Pohorilenko 1997:192 (Fotos 6 and 7); fragments of a full-round sculpture, possible instance of monument mutilation
Monument 32	NDA	NDA	NDA	Clewlow and Corson 1968:197 (Plate 9e)
Monument 36a	NDA	NDA	NDA	Clewlow and Corson 1968:198 (Plate 10b); monument is fractured
Monument 36b	NDA	NDA	NDA	Clewlow and Corson 1968:198 (Plate 10e); monument is fractured
Monument 44	NDA	NDA	NDA	Clewlow 1968 (Foto 35); Clewlow and Corson 1968:199-200 (Plates 11e and 12a); monument consists of a decapitated head, possible instance of monument mutilation
Monument 47	NDA	NDA	NDA	Clewlow and Corson 1968:200 (Plate 12f)
Monument 52	No	Toppled	No	Blom and La Farge 1926-1927:89; Stirling 1968:37 (Plate 1); found in a supine position
Monument 53	No	Toppled	No	Gallegos Gómora 1990:21-23; Stirling 1968:38 (Plate 2); found lying face up; excavations on Mound D-7 located Middle Formative period ceramic sherds under the monument
Monument 54	No	Toppled	No	Stirling 1968:39 (Plate 3); found lying face up
Monument 57	NDA	NDA	NDA	Clewlow and Corson 1968:201 (Plate13a); monument is a decapitated sculpture, possible instance of monument mutilation
Monument 59	NDA	NDA	NDA	Clewlow and Corson 1968:201 (Plate13c); Ochoa and Castro-Leal 1986:38-39
Monument 62	NDA	NDA	NDA	Clewlow and Corson 1968:201 (Plate 13e)
Monument 63	NDA	NDA	NDA	Williams and Heizer 1965 (Plate 2d); Ochoa and Castro-Leal 1986:54
Monument 67	NDA	NDA	NDA	Clewlow and Corson 1968:202 (Plate14c); Ochoa and Castro-Leal 1986:64; possibly an unfinished bench?
Monument 68	NDA	NDA	NDA	Williams and Heizer 1965 (Plate 2e); Ochoa and Castro-Leal 1986:76; possibly an unfinished colossal head?
Monument 69	NDA	NDA	NDA	Clewlow and Corson 1968:202 (Plate 14d); low relief carvings on the monument are heavily eroded
Monument 78	NDA	NDA	NDA	Ochoa and Castro-Leal 1986:30-31; monument consists of a decapitated head, possible instance of monument mutilation
Unnumbered Monument	NDA	NDA	NDA	Monument is fragmentary, possible instance of monument mutilation
Unnumbered Bench	NDA	NDA	NDA	Part of the bench has been broken off and is missing, possible instance of monument mutilation

Table 5.1 – Depositional Contexts of Monuments with Pits and/or Grooves from La Venta, Tabasco ("NDA" indicates that there is no data available).

Monument	Buried?	Toppled?	Associated with Caching?	Notes and References
Monument 1 (Colossal Head 1)	No	Toppled	No	Stirling 1955, Plates 5 and 6; monument found lying face up, found on top of Early Formative sherds
Monument 2 (Colossal Head 2)	Fully	Toppled	No	Stirling 1955:10; Coe and Diehl 1980:302 (Fig.424); Porter 1989; situated above Early Formative sherds (San Lorenzo), monument shows signs of re-carving on its right side
Monument 3 (Colossal Head 3)	Partially	Toppled	No	Stirling 1955:11; Coe and Diehl 1980:304; situated above Early Formative sherds (San Lorenzo A); found lying face up in a spring
Monument 4 (Colossal Head 4)	Almost fully	Toppled	No	Stirling 1955:4; Coe and Diehl 1980:306
Monument 5 (Colossal Head 5)	No	Toppled	No	Stirling 1955:12; Coe and Diehl 1980:308; found lying face down in a ravine (Laguna 8)
Monument 17 (Colossal Head 6)	Partially	Toppled	Yes	Coe and Diehl 1980:324; San Lorenzo phase pottery found around the head, a cache of multi-drilled iron-ore beads found near its base
Monument 53 (Colossal Head 7)	Fully	Toppled	No	Coe and Diehl 1980:363; Porter 1989; lying face up at a depth 1.2 meters; associated with San Lorenzo phase A material, monument shows signs of re-carving on its right side
Monument 61 (Colossal Head 8)	Fully	Toppled	No	Coe and Diehl 1980:364; lying on its left side face up at a depth 4 meters in an intentionally created pit 2 meters deep and in association with Monument 62
Monument 66 (Colossal Head 9)	Fully	Toppled	No	Cyphers 2004:133; Ruiz Gordillo 1982:12; found lying face up; monument shows signs of re-carving on its flattened back
Monument 89 (Colossal Head 10)	Fully	Toppled	No	Cyphers 1994b:68; 2004:154-156; found lying on its left side buried at the bottom of Ojochi ravine
Monument 6	NDA	NDA	NDA	Stirling 1955:13; Coe and Diehl 1980:310; monument consists of a decapitated head, possible instance of monument mutilation
Monument 14	Fully	NDA	No	Stirling 1955:15; Coe and Diehl 1980:320; found under the water in Laguna 8
Monument 19	Almost fully	NDA	No	Coe and Diehl 1980:93-94, 329; intentionally buried sometime during the San Lorenzo phase in red-yellow clay in association with stela fragments
Monument 20	Almost fully	Toppled	No	Coe and Diehl 1980:94-99, 330; intentionally dragged into position and encased in soil before the Nacaste phase, found lying with the niche figure facing upward
Monument 21	Almost fully	Toppled	Yes	Coe and Diehl 1980:100-103, 332-333; found at the confluence to two arroyos, buried trough-side up and on top of a cache containing celts and pottery
Monument 23	Partially	No	No	Stirling 1955:4; Coe and Diehl 1980:334 (Fig. 455); part of a line of monuments buried at the same time along the Group D ridge
Monument 50	Fully	No	No	Coe and Diehl 1980:358; found 2 m north of the main drain line; may have originally been part of a colossal head, possible instance of monument mutilation
Monument 51	Fully	No	No	Coe and Diehl 1980:361; found northeast of Laguna 19; partially buried during the San Lorenzo A phase and completely covered by the Palangana phase
Monument 63	Fully	No	No	Brüggermann and Hera 1970:20; Coe and Diehl 1980:365; monument deliberately placed in a pit and later filled with 13 cobbles
Monument 64	Partially	No	No	Brüggermann and Hera 1970:20; Coe and Diehl 1980:365; found at the base of Mound C4-31, partially buried in a Villa Alta stratum; upper surface of the monument has been fractured
Monument 112	Fully	Toppled	No	Cyphers 2004:190-191 (Fig. 127); found lying face down
Monument 114	NDA	NDA	No	Winfield Capitaine 1991:75; Cyphers 2004:193

Table 5.2 – Depositional Contexts of Monuments with Pits and/or Grooves from San Lorenzo Tenochtitlán, Veracruz ("NDA" indicates that there is no data available).

Monument	Buried?	Toppled?	Associated with Caching?	Notes and References
El Viejón Monument 1	NDA	NDA	NDA	Medellín Zenil 1960:82; de la Fuente 1973:131-133; monument accidentally found in the patio of a home; located above Middle Formative period ceramics
Angel R. Cabada Monument 1	NDA	NDA	NDA	Dubón 1972 (Fig. 23); de la Fuente 1973:267-268
Llano de Jicaro Monument 8	Yes	Yes	No	Medellín Zenil 1960:92-93; de la Fuente 1973:143-144; Bove 1978:1; Gillespie 2000:104-105; formerly identified with nearby Laguna de los Cerros; found lying on its back; covered by Classic period ceramics
Tres Zapotes Stela F	NDA	NDA	Yes?	Pool (2010:116); found in a field east of Group 1, near Mound 111 (associated with three Middle Formative period burials)
Alvarado Stela	NDA	NDA	NDA	Batres 1905:8; Joralemon 1971:21; sometimes placed within the Late Formative period (Pérez de Lara and Justeson 2006) or Classic period (Cervantes 1976)

Table 5.3 – Depositional Contexts of Monuments with Pits and/or Grooves from Outside of La Venta and San Lorenzo ("NDA" indicates that there is no data available).

more is known about the depositional contexts of these monuments. These data clearly demonstrate that the monuments of San Lorenzo exhibiting pit and groove work were often re-positioned and fully buried, and in the case of the site's ten colossal heads, also toppled. Only one instance of caching was found and was associated with Monument 17 (i.e. Colossal Head 6). The detailed stratigraphic studies available for most of these monuments also show that these activities took place before the presence of Villa Alta phase (AD 900-1100) ceramics and were most often associated with San Lorenzo (1150-900 BC) and Nacaste (900-700 BC) phase ceramics. Indeed, in some cases, a Middle Formative period Palangana phase (600-400 BC) layer covered the monuments (e.g. Monument 51).

An examination of the placement of Olmec-style monuments with pit and groove work at San Lorenzo reveals that these sculptures also occur throughout the central core of the site (Figure 4.5). Only one sculpture (Monument 23) was associated with the monument workshop in the Group D Ridge. Therefore, as was the case at La Venta, it does not appear that pit and groove work at San Lorenzo was part of a monument re-carving program.

DEPOSITIONAL CONTEXTS OF THE MISCELLANEOUS MONUMENTS

An examination of the archaeological reports detailing the Olmec-style monuments with pits and grooves from outside of La Venta and San Lorenzo reveals very little information regarding their stratigraphic contexts. Most of these monuments, with the exception of Llano de Jícaro Monument 8 (Figure 5.2) and Tres Zapotes Stela F (Figure 4.10), were not properly excavated. In Table 5.3, I detail as much information as possible about the peri-depositional activities associated with the monuments.

In terms of chronological positioning, the recently discovered Tres Zapotes Stela F was recovered from a context (Mound 111, Group 1) that was associated with three Middle Formative burials (Pool 2010: 116). These burials may constitute a form of caching involving the stela, but more information is needed before its relationship to these features is fully known.

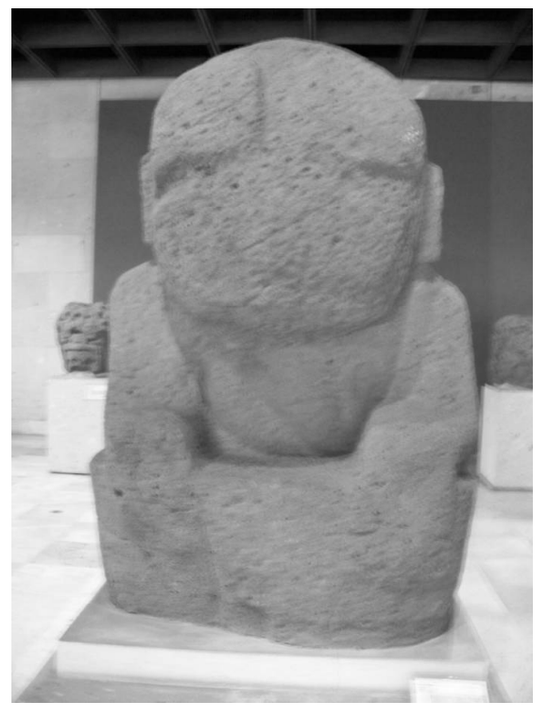


Fig. 5.2 – Llano de Jicaro Monument 8 (Museum of Anthropology, Xalapa, Veracruz). Photograph by the author.

Because of Medellín Zenil's investigations around Laguna de los Cerros (1960) as well as subsequent work by Susan Gillespie and her team at Llano de Jicaro (Gillespie 1994, 2000; Grove, Gillespie,

Ortíz Ceballos, and Hayton 1993), there is enough information to show that Llano de Jícaro Monument 8 also dates to the Middle Formative period and was therefore treated in a manner reminiscent of the pitted and grooved monuments from La Venta and San Lorenzo Tenochtitlán. Moreover, its burial under layers of soil containing Classic period sherds also shows that it was toppled sometime before that time, or during the Formative period. This should not be surprising. Almost 80% of all known Olmec-style monuments occur at La Venta, San Lorenzo Tenochtitlán, and Laguna de los Cerros (Gillespie 2000: 110-111; Grove, Gillespie, Ortíz Ceballos, and Hayton 1993: 94), which may in part account for similarities in the way their monuments were treated over time.

FINAL COMMENTS

In this section, I examined taphonomic evidence regarding the depositional contexts and placement of the Olmec-style monuments displaying pit and groove work with an eye towards finding patterns of cultural activity which are analogous to those seen at El Manatí and La Merced. Although there were many instances of partial and full burial recorded for the monuments of La Venta and San Lorenzo, this pattern differed from the ritual deposits at the sacred springs in the sense that it often involved the deliberate toppling of monuments, possibly near the areas in which they had originally stood erect. Ann Cyphers interprets this activity as evidence of monument abandonment (1999: 162). Although this is a logical interpretation, it is equally likely that, in their toppled state, the monuments were in the best possible position to be marked by pits and grooves. And since not all of these monuments were toppled face-up, these markings cannot be considered solely as attempts at mutilating or defacing the carved surfaces of the sculptures (see also Magni 2000; Pohorilenko 2007 for a similar point of view). Likewise, the majority of monuments with pit and/or groove work for which locational data was available appear to have been placed throughout the central cores of these sites. This spatial pattern suggests that they were not in the process of being recycled or re-carved. Rather, it seems more likely that the pits and grooves were executed on the monuments near where the monuments had stood before being toppled and/or buried.

Given these observations, in the next section, I develop a model that offers an alternative interpretation for these activities as well as the pit and groove work observed on these monuments. Based on the observation that the central cores of La Venta and San Lorenzo, including their monuments, were organized into ritual landscapes which ultimately served to legitimize and express the power of their respective rulers, this model will seek to place the peri-depositional activities associated with monuments exhibiting pit and groove work within a socio-political framework of ritual action.

CHAPTER SIX - PIT AND GROOVE WORK AND THE RITUAL LIFECOURSE OF OLMEC-STYLE MONUMENTS

Even though archaeologists have occasionally relied on specific Mesoamerican analogs (e.g. Medellín Zenil 1960) as well as general ethnographic analogies to posit various forms of ritual activity as an explanation for the pit and groove work observed on the Olmec-style monuments of the southern Gulf Coast lowlands (e.g. Clewlow, Cowan, O'Connell and Benemann 1967; Grove 1981; Pohorilenko 1975, 2007), most of these ritual practices have remained poorly defined in relation to other aspects of Formative Gulf Coast society (e.g. Magni 2000; Ortíz Ceballos and Rodriguez 1999b; Steede and Athy 1998, 2000). Part of the reason for this apparent lack of progress is that very little information was previously available on the cultural, monumental, and temporal contexts of pit and groove work. There has also been no comprehensive accounting of all known Olmec-style monuments with pit and groove work (Pohorilenko 2007: 26). Based on the data presented in this study as well as ethnographic and archaeological analogies drawn from other parts of Mesoamerica, such as the ritual practices suggested by the material remains of El Manatí, a preliminary model of the manner in which pit and groove work on Olmec-style monuments was incorporated into the ritual and socio-political practices of Formative Gulf Coast societies can now be proposed (Figure 6.1). This model suggests that pit and groove work was just one part of a much larger cultural framework of ritual activity associated with different facets of rulership along the Formative period Gulf Coast. This framework involved three distinct stages during the life course of the monuments in which they were the focus of different cultural practices: (1) rituals of rulership; (2) termination rituals; and (3) charging rituals. I will describe each of these stages in turn.

STAGE ONE – RITUALS OF RULERSHIP

This stage involved the quarrying, transportation, and initial carving of monuments found at La Venta and San Lorenzo. Most of the monuments were created from basalt transported from sources in the Tuxtla Mountains (Coe and Diehl 1980: 295-297), while others were made from locally available schist and sandstone (Stirling 1968; Porter 1992). Although the exact technique used for transportation is not yet known, both land and water routes have been proposed (Nelson and Clark 1990). In addition, the methods used for carving these monuments appear to have been time-intensive, involving the use of groundstone abrasives and stone-on-stone hammering or pounding to carve the features of the monuments. Finally, the subject matter of most of these monuments seems to have varied from portraiture (i.e. the colossal heads and some seated figures) to the depiction of zoomorphs and composite creatures, and from stelae representing narratives related to deities and rulers to architectural elements involved in the transportation of water and the creation of retaining walls. All in all, the expense, labor, and time involved in the manufacturing and placement of these monuments indicates that they served as references to a ruler's power over people, ideas, distant resources and the landscape of the ceremonial cores of La Venta and San Lorenzo.[1]

STAGE TWO - TERMINATION RITUALS

In some cases, the end of a ruler's reign appears to have been associated with two functionally distinct cultural practices -- monument mutilation and monument recycling or re-carving – even though both behaviors may have had similar meanings (Cyphers 1999: 166-168; Grove 1981: 63). As formulated by Grove, monument mutilation in the Gulf Coast entailed practices of decapitation, breakage, and/or effacement linked to the transition of rulership.[2] Likewise, recent treatments of monument re-carving along the Gulf Coast (e.g. Porter 1989) have implied that this practice entailed the appropriation of thrones which served as indexical representations of a previous ruler's right to rule and their transformation into colossal heads, which are likely to have been portrayals of current rulers. Whether such practices simply marked the end of the previous ruler's reign and the ascension of a new ruler, were intended to be citational performances by a new ruler aiming to recall the memory of a past ruler (i.e. ancestor) from the same dynastic house (Gillespie 2000: 474-475) or, as Clark (1997: 220-222) suggests, reflected political competition among rival elite factions is not yet known. However, there is at present no evidence to suggest that the pit and groove work

[1] See González Lauck (2010: 147) for a similar conclusion with respect to La Venta. In addition, the diachronic settlement patterns analyzed by Symonds (2000: 70) at San Lorenzo, suggest that the lords of that regional center created a network of small villages and strategic ceremonial sites to exploit resources along the Coatzacoalcos River.

[2] Grove (1981: 49) argued that these forms of "mutilation" were intended solely to destroy or deface a monument, and should therefore be considered separately from monument re-carving.

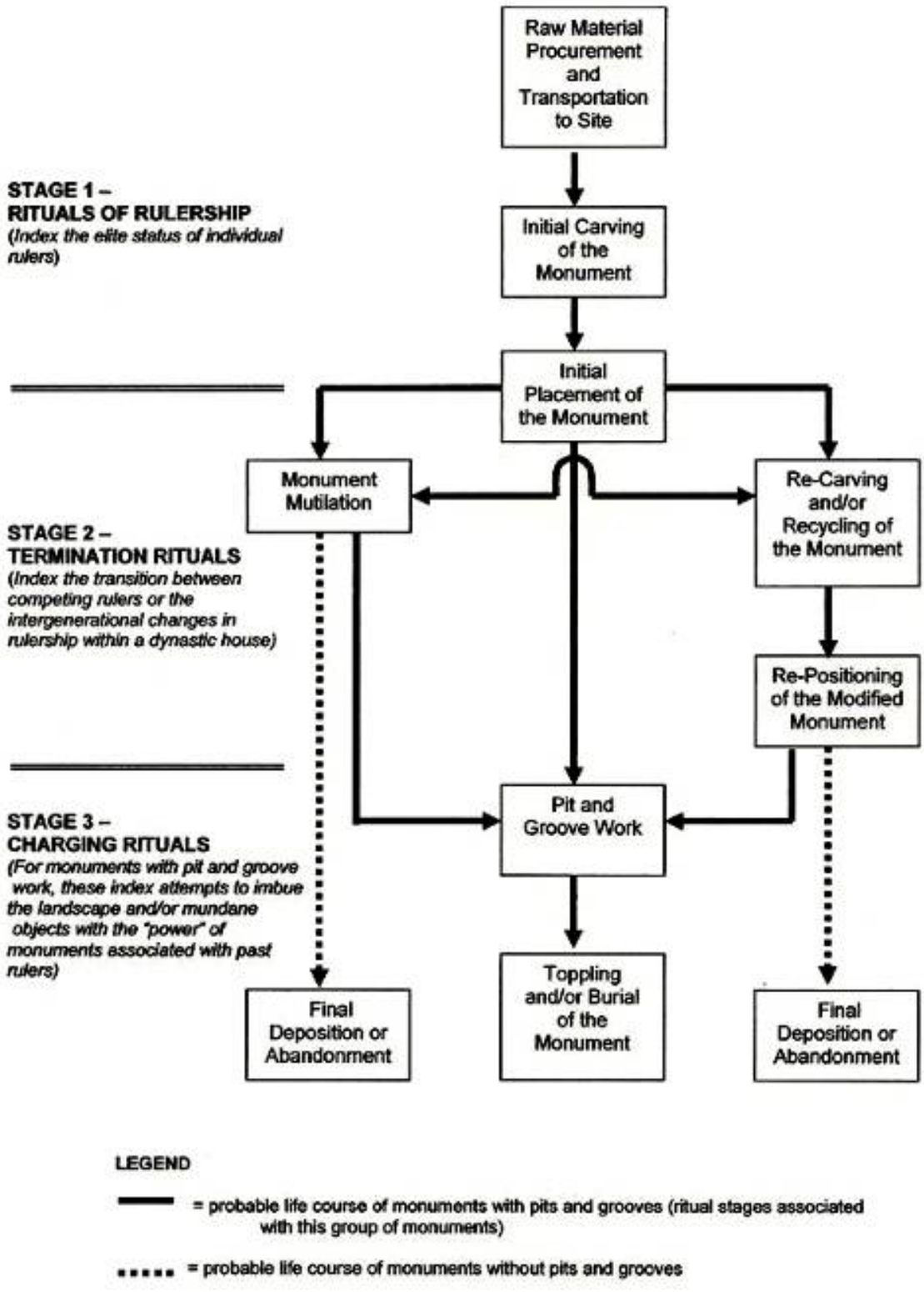

Raw Material Procurement and Transportation to Site
STAGE 1 – RITUALS OF RULERSHIP
(Index the elite status of individual rulers)
Initial Carving of the Monument
Initial Placement of the Monument
Monument Mutilation
Re-Carving and/or Recycling of the Monument
STAGE 2 – TERMINATION RITUALS
(Index the transition between competing rulers or the intergenerational changes in rulership within a dynastic house)
Re-Positioning of the Modified Monument
Pit and Groove Work
STAGE 3 – CHARGING RITUALS
(For monuments with pit and groove work, these index attempts to imbue the landscape and/or mundane objects with the "power" of monuments associated with past rulers)
Final Deposition or Abandonment
Toppling and/or Burial of the Monument
Final Deposition or Abandonment
LEGEND
= probable life course of monuments with pits and grooves (ritual stages associated with this group of monuments)
= probable life course of monuments without pits and grooves

Fig. 6.1 – A Model of the Ritual Life Course of Formative Gulf Coast Monuments with Pit and/or Groove Work. Drawing by the author.

observed on the monuments of La Venta and San Lorenzo were in fact types of mutilation and intended solely to destroy or deface these monuments. There is also limited evidence at San Lorenzo that pit and groove work may have been associated with monument recycling. Rather, these markings were clearly produced after the re-carving of monuments, as evidenced by San Lorenzo Monuments 2 and 53 (see Figures 4.8 and 1.1 respectively). As such, the significance of the pit and groove work on these monuments would have arisen after the termination rituals, which resulted in the re-carving, and possibly mutilation, of the sculptures.

Fig. 6.2 – Left Profile of La Venta Monument 63 (La Venta Prak Museum, Villahermosa, Tabasco). Photograph by the author.

STAGE THREE – CHARGING RITUALS AND THE SACRALIZATION OF THE LANDSCAPE

Once a monument was carved and/or re-carved, and after its original life-use, it was occasionally chosen to be toppled and/or buried. This appears to have been done once a monument no longer served its purpose in light of the rituals of rulership and termination rituals discussed above. The toppling and burial of these monuments inevitably coincided (before or afterwards) with their marking by pit and groove work (Figure 6.2). Conceivably, such activities may have had a similar purpose to the termination rituals involving monument recycling; namely, the erasure of monumental signs of elite power associated with past rulers, and possibly the ritual divestment of their animate "power". However, the elimination of these monumental references to elite power did not require the toppling, burial, and marking of these monuments with pits and grooves. It seems that monument mutilation and re-carving were sufficient to achieve these ends. In light of this observation, I believe that these activities established a new relationship between monuments and the expression of elite status.[3]

In fact, evidence from a number of Classic period Maya sites, such as Cerros (Friedel and Schele 1989), Cohla (Mock 1998) and Copán (Noble 1998), suggests that termination events could serve as a prelude to the creation of new political relationships. Because such rituals seem to have involved the re-investment of "power" from a past ruler (and their monuments, see also Just 2005: 69-71) to both utilitarian and ritual objects owned by various members of the community such as ground-stone celts and hammerstones,[4] I have glossed the cultural practices of monument toppling, partial burial, and marking with pits and grooves as "charging rituals". As suggested by the view that grooves were created by the grinding of celts and axes on the surfaces of monuments (Stirling 1943: 52; Clewlow 1974: 13; Rodríguez and Ortíz Ceballos 2000: 162-164), such rituals are likely to have used "decommissioned" monuments as perennial sources of "power" (much like relics) by later generations (Figure 6.3 and Figure 6.4).[5] Alternatively, as was seen at El Manatí, these toppled and/or partially buried monuments may have been considered powerful "animate" objects due to their massive scale and presence within the scared landscape of their respective sites.[6] Referencing other forms of sacred geography such as caves, Stone (1992: 128) has argued that this concern with the sacredness of topographic features may represent a religious folk tradition which, when combined with elite symbols, could have

[3] Recalling Evans-Pritchard's study of divine kingship among the Shilluk (1948) as well as the transfer of kingship in France, David Kertzer (1988: 24-28) argued that the investment and divestment of political power required somekind of ritual performance in order to be effective.

[4] Recent work at San Lorenzo has shown that both elite and non-elite residents of that regional center hoarded both sculptural fragments and ground-stone objects (Cyphers 1996: 66, 1999: 166-167), suggesting that Olmec-style monuments were considered important commodities or prestige-items and were therefore likely to have been the loci of status competition.

[5] This pattern of ritual practice is also found in house societies. In these societies, the monuments of past rulers would have served a similar purpose to heirloom objects in the sense that they would been used by the members of a dynastic house to commemorate their ancestors and/or to publicly claim these rulers as "attached" to their house (see Joyce 2000: 202-210).

[6] A similar idea has been proposed by Stuart (2010: 291-296) to account for the close relationship between monumental scared stones, stelae, and the animate "power" of lightning associated with the storm god, Chahk (Chaak) among the Preclassic and Classic period Maya.

given deeper meaning to the rituals which took place in urban ceremonial centers.

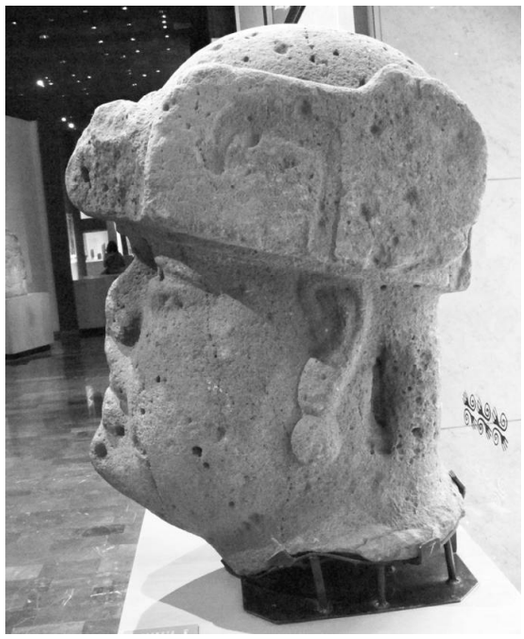


Fig. 6.3 – Left Profile of San Lorenzo Monument 6 (Loma del Zapote Monument 12) (National Museum of Anthropology, Mexico City). Photograph by the author.

Fig. 6.4 – La Venta Altar 8 (La Venta Site Museum, La Venta, Tabasco). Photograph by the author.

As a case in point, it appears that some forms of anthropic monument marking, such as hemispherical pits with dimples, acquired special significance primarily in relation to the colossal heads of San Lorenzo and, to a lesser extent, La Venta. Could this practice be associated with the transfer of power from one ruler to another (Grove 1981)? Or, does it represent the appropriation of a folk tradition by the elites of San Lorenzo and La Venta in order to augment their own social statuses and power? Or, did this practice represent a form of popular monument worship as was reported to have taken place with Las Limas Monument 1 and San Martín Pajapan Monument 1 (Medellín Zenil 1965, 1968)? Although it is difficult to reconstruct the thought processes of the Formative period peoples who made these marks, it does appear that these portraits were specifically targeted as opposed to other kinds of monumental sculpture. From this point of view, then, the production of pits and grooves was not the primary intention of these ritual acts. Rather, pits and grooves were the by-products of these rituals. At the same time, the ritual deposition of these monuments may have also invested the central cores of La Venta and San Lorenzo Tenochtitlán with the same "power", thereby creating and/or reinforcing a sense of the sacredness of their landscapes. [7]

SUMMARY

According to the model proposed here, all three of the stages in the ritual life course outlined above (i.e. rituals of rulership, termination rituals, and charging rituals) would have formed part of a widespread cultural practice in which various Formative period social groups attempted to elevate their social status and to legitimize their poltical authority by appropriating the monuments commissioned and erected by previous rulers and then converting them into active loci of ritual behavior. Although the nature of the ritual behaviors changed from one stage in the life course of Olmec-style monuments to another, each type of activity treated these monuments as receptacles of "power" which could be manipulated and appropriated by successive generations to suit their own socio-political circumstances. In this way, the ritual life course of Olmec-style monuments at La Venta, San Lorenzo Tenochtitlán, and to a lesser extent other sites along the Gulf Coast, such as Tres Zapotes and Llano de Jicaro, played a role in normalizing political power during the Formative period through their expression of a complex worldview that involved widespread beliefs regarding sacred places, animate "powers", cyclical changes associated with agriculture, and the divine ancestors of rulers (Joralemon 1996: 52-53).

[7] Thus, much like their modern Belauan and Yapese megalithic counterparts (Parmentier 1987: 215, 270; Schneider 1984: 21-28), Olmec-style monuments with pits and grooves could have served as permanent physical markers of the social relationships between current and past members of a corporate group or house. And since these ancestors were perceived as especially efficacious beings (Keesing 1984), this animate "power" may have also been passed onto the land.

CHAPTER SEVEN - CONCLUSIONS

This study has sought to illuminate some of the cultural practices that incorporated the pit and groove work observed on some of the monuments of the Formative Gulf Coast in an effort to achieve a more comprehensive interpretation of these forms of anthropic marking on Olmec-style monuments. A thorough and detailed examination of these monuments revealed that 58 Olmec-style monuments along the Gulf Coast contained pits and/or grooves. The majority of these came from the Formative period sites of La Venta and San Lorenzo Tenochtitlán. An analysis of the morphological features of this pit and groove work relative to the number of marks and distribution on their respective monuments revealed that many previously accepted explanations for these markings were either incorrect or too limited in scope.

Their overall random distribution demonstrated that pits and grooves did not function as a form of symbolic communication or record-keeping. In terms of their placement on their respective monuments, it was found that pits and grooves were always placed on top of the carved features of both original sculptures and re-carved monuments. This, in turn, indicated that these markings were not part of the initial carving process or efforts at monument recycling. Rather, pits and grooves were placed on the monuments afterward. In addition, although pits and grooves have often been characterized as forms of monument mutilation equivalent to the decapitation of statues or the breakage of monuments, such interpretations rely on the observation that pits and grooves were made on top of pre-existing carved features (Grove 1981). However, the pit and groove work on the Olmec-style monuments of the Gulf Coast shows patterns of placement that suggest alternate interpretations. The alternative model discussed here is that such pit and groove work was an essential element of the ritual burial and/or toppling of these monuments.

Based upon the evidence that similarly marked stones were used in the offerings of El Manatí and La Merced to the southeast of San Lorenzo Tenochtitlán, and the evidence for caching practices at both La Venta and San Lorenzo Tenochtitlán, the hypothesis that the pitted and grooved monuments of these major Formative period centers were also ritually buried was tested by examining excavation records for their depositional contexts. For all of the monuments with detailed records, it was shown that they were either buried and/or toppled. Some were also buried on top of, or in association with, offerings. These offerings consisted of celts, ornaments, ceramics or smaller portable monuments. Thus, although far from complete, this analysis provides a preliminary indication that pit and groove work was indeed associated with ritual practices that were focused on the monuments.

To provide a frame of reference for future research and to more adequately place these markings within the cultural practices that appear to have dominated the central cores of La Venta and San Lorenzo Tenochtitlán during the Early and Middle Formative periods, I also provided a model which situated the practice of pitting and grooving within a cultural framework consisting of three stages in the ritual life course of Olmec-style monuments: (1) rituals of rulership in which monuments were initially carved; (2) termination rituals in which selected monuments were re-carved and recycled at the end of a ruler's reign; and (3) charging rituals in which monuments were marked with pit and groove work in addition to being toppled and/or partially buried. Although the cultural logics underlying this behavior are still open to debate, it seems that the pits and grooves may have been by-products of rituals intended to divest "decommissioned" monuments of the "power" of past rulers and then to re-invest this animate power onto other objects (and perhaps even the landscape). One possible interpretation for ritual acts involving pit and groove work was that they represent a folk tradition that was initially attached to sacred sites such as El Manatí, but was subsequently appropriated or adopted by the elites of the main regional centers of the Gulf Coast lowlands. Although not mutually exclusive to this interpretation, it was also argued that such ritual practices were congruent with the kinds of social relationships typically found in house societies in which the status of members of a dynastic house rested upon similar public engagements between social memories of past rulers, monumental features in the landscape, as well as group identity.

APPENDIX ONE – A GUIDE TO OLMEC-STYLE MONUMENTS WITH PIT AND GROOVE WORK

This catalog contains observational data on all of the known Olmec-style monumental sculptures from the Formative period southern Gulf Coast lowlands with pit and groove work.[1] Although some of the information is summarized in the tables associated with chapter four (i.e. Tables 4.1-4.4) and chapter five (i.e. Tables 5.1-5.3), I have included additional references and details regarding the iconography of the monuments, their lithology, and their techniques of execution. To facilitate future analyses and comparisons, the entries were completed in a manner that is compatible with previous catalogs of Olmec-style art (e.g. de la Fuente 1973; Coe and Diehl 1980; Cyphers 2004; Winfield Capitaine 1987). To encourage cross-referencing, the entries in this catalog are organized in the same order as the monuments are discussed in the text and tables. In each entry, the monuments will be described as follows:

MONUMENT ID (includes a reference to the associated illustration at the end of the appendix)
REGION: general region in Mesoamerica
GEN PROV: general provenience (i.e. archaeological site or town)
SPE PROV: specific location of the monument at the site
CURRENT LOC: current location of the monument (i.e. in situ at the site or in a museum)
OTHER ID: designations used by other scholars
CHRONOLOGY: probable chronological period assigned to the monument
DIMENSIONS: length x width x thickness
MEDIUM: lithology of the stone
MONUMENT TYPE: type of monument (e.g. colossal head, throne, full-round sculpture, stela, altar, column)
PIT AND GROOVE WORK: type of markings found on the monument (i.e. pits and/or grooves) and their placement on the monument
TECHNIQUE: techniques of execution for the monument (i.e. low or high relief, pecking, abrasion, etc.)
TAPHONOMY: the monument's state of preservation; evidence of re-use, recycling, mutilation, and/or other forms of marking
PHOTOS: references to previous photographic documentation in alphabetical order
DRAWINGS: references to previous line drawings and rubbings in alphabetical order
DESCRIPTION: brief description of the monument

These entries are followed by a series of illustrations depicting each monument described in the catalog. As indicated by the captions for each accompanying illustration, the monuments were drawn either from photographs taken by the author or from previous photographs taken by other researchers. In most cases, drawings based on the author's modern photographs were cross-checked against earlier photographs (e.g. Clewlow and Corson 1968; Coe and Diehl 1980; Cyphers 1995b, 2004; Ochoa and Castro-Leal 1987; Pohorilenko 1997; Stirling 1943, 1955) in order to account for missing details or to clarify eroded features. For the purposes of data recording and clarity, the depiction of fissures, cracks and vesicles in the rock medium of the sculptures was kept to a minimum. The types of pit and groove work found on each monument are also noted using the symbols in the legend (Figure A.1).

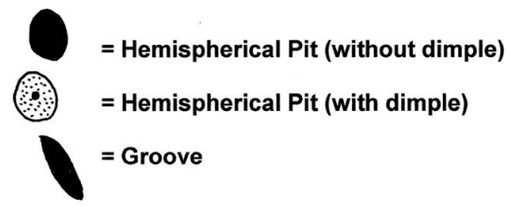


Fig. A.1 – Legend for Monument Illustrations.

LA VENTA ALTAR 2 (Figure A.2)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: platform to the south of the great pyramid (Complex C), near La Venta Altar 3
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Early to Middle Formative periods (1100-400 BC)
DIMENSIONS: 99 cm x 134 cm x 129 cm
MEDIUM: basalt
MONUMENT TYPE: throne
PIT AND GROOVE WORK: grooves only (front facet of the monument)
TECHNIQUE: high relief carving of the niche figure
TAPHONOMY: Altar 2 was found in a toppled state.

[1] This catalog does not, however, include the undressed stones with pits and/or grooves that were deposited in the El Manatí and La Merced springs during the Early Formative period (c. 1600 BC) in southern Veracruz (Ortíz Ceballos and Rodríguez 1989, 1994, 1999a; Ortíz Ceballos, Rodríguez, and Delgado 1997; Rodríguez and Ortíz Ceballos 2000).

PHOTOS: Blom and La Farge 1926-1927: 86 (Fig. 73); de la Fuente 1972: 19, 1973 (Illustration 2), 1996: 45 (Fig. 3); González Calderón 1977: 139 (Foto 216); González Lauck 2004: 96 (Fig. 5), 2010: 140 (Fig. 6.6); Milbrath 1979: 60 (Fig. 38); Ochoa and Castro-Leal 1986: 60; Piña Chan 1989 (Plates 64, 71); Stirling 1943 (Plate 38c); Tate 2011: 207 (Fig. 7.6b)
DRAWINGS: de la Fuente 1973: 19; Joralemon 1971 (Fig. 210a); Tate 2011: 240 (Fig. 8.18); Wicke 1971: 25 (Fig. 18)
DESCRIPTION: La Venta Altar 2 consists of a throne sculpture depicting an adult human figure emerging from a hollow niche. This niche figure is depicted sitting in a cross-legged manner and holding a small infant. The remnants of circular ear ornaments and a headdress are visible on the niche figure as well. One groove is visible on its front facet.

LA VENTA ALTAR 4 (Figure A.3)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: near a large mound in Complex B
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: La Venta Altar 1 (Stirling 1940)
CHRONOLOGY: Early to Middle Formative periods (1100-400 BC)
DIMENSIONS: 160 cm x 319 cm x 190 cm
MEDIUM: basalt
MONUMENT TYPE: throne
PIT AND GROOVE WORK: pits only (front facet of the monument)
TECHNIQUE: high relief carving of the niche figure; low relief carving of the panels and features
TAPHONOMY: Altar 4 was found in association with a cache that contained jade and amethyst beads, possibly from a necklace and two bracelets (Stirling 1943: 55).
PHOTOS: Benson 1976: 71 (Fig. 1); Bernal 1969 (Plate 14), 1979: 81; Blom and La Farge 1926-1927: 88 (Figs. 77-78); de la Fuente 1972: 30-31, 1973 (Illustrations 4a and 4b), 1977 (Illustration 49), 1981: 91 (Fig. 7), 1995: 23 (Fig. 9), 2001: 32 (Fig. 12), 2004: 123 (Fig. 9); Di Castro and Cyphers 2006: 42 (Fig. 5b); Diehl 2004: 110 (Fig. 70); Drucker, Heizer, and Squier 1959 (Plate 56b); Gillespie 1999: 235 (Fig. 13-3); González Lauck 1994: 109 (Fig. 6.25), 2010: 142 (Fig. 6.8); Gruener 1987: 399-400 (Figs. 43-44); Magni 1999: 105 (Plate XVII); Milbrath 1979: 58 (Figs.30-31); Ochoa and Castro-Leal 1986: 42-44; Piña Chan 1989 (Plates 68, 70); Pool 2007: 167 (Fig. 5.10); Reilly 1995: 26, 41 (Fig. 31), 2010 (Fig. 19); Scott and Brady 2005: 150 (Fig. 12.3); Stirling 1943 (Plates 37, 38b); Soustelle 1995 (Plates 5-6, 18) Tate 2011: 196 (Fig.6.14), 207 (Fig. 7.6f), 231 (Fig. 8.13)
DRAWINGS: Benson 1971: 25 (Fig. 34); Bernal 1969 (Plate 14); Bonifaz Nuño 1996 (Fig. 39); Clark 1994: 214 (Fig. 2c); Clark, Guernsey, and Arroyo 2010: 13 (Fig. 1.8); de la Fuente 1973: 25; Drucker 1952: 188 (Fig. 56); Gillespie 2000: 106 (Fig. 8); González Lauck 2004: 96 (Fig. 6); Grove 1973:131; Guernsey and Reilly 2001: 40 (Fig. 6); Joralemon 1971: 50 (Fig.144); Joyce and Knox 1931: 17 (Fig. 1); Lowe 1998: 50 (Fig. 11); Magni 1995b: 96 (Fig. 6), 1998: 27 (Fig. 1b), 1999: 82 (Fig. 16), 2003: 136 (Fig. 31); Piña Chan 1989 (Plate 69); Reilly 1995: 40-41 (Figs. 30 and 32); Smith 1963: 207 (Fig. 404); Tate 2007: 19 (Fig. 8), 2011: 195 (Fig. 6.13); Wicke 1971: 13 (Fig. 8)
DESCRIPTION: La Venta Altar 4 consists of a throne sculpture depicting an adult human figure emerging from a hollow niche, possibly representing a cave (Gillespie 1999; Grove 1973) or a womb (Tate 2007). This niche figure is depicted sitting in a cross-legged manner and holding rope-like object in its right hand. The rope-like object extends around most of the sculpture. The niche figure is also shown wearing an avian headdress, a collar or heavy necklace, and a pectoral. The niche is outlined by a rope-like motif from which four tasseled plants, possibly maize, grow. The flat, table-top portion of the throne is decorated with a denticulated motif, possibly functioning as a "skyband" or schematic representation of the earth, as well as a more naturalistic portrayal of feline face. The right profile of the throne contains a low relief carving of a human figure with an elongated head holding onto the same rope-like motif held by the niche figure. In addition, one shallow pit can be found on this throne's front side.

LA VENTA ALTAR 7 (Figure A.4)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: southeast of the Great Pyramid, between Complexes A and B
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Early to Middle Formative periods (1100-400 BC)
DIMENSIONS: ------
MEDIUM: andesite
MONUMENT TYPE: throne
PIT AND GROOVE WORK: pits and grooves (superior facet of the monument)
TECHNIQUE: high relief carving of the niche figure; low relief carving of the panels
TAPHONOMY: found partially buried (Drucker 1952, Plate 65)
PHOTOS: de la Fuente 1973 (Illustration 7); Drucker 1952 (Plates 65a and 65b); Ochoa and

Castro-Leal 1986: 79; Piña Chan 1989 (Plate 74) Tate 2011: 204 (Fig. 7.2b), 208 (Fig. 7.8)
DRAWINGS: de la Fuente 1973: 33; Drucker 1952: 188 (Fig. 56), 190 (Fig. 57k); Magni 1995b: 100 (Fig. 10); Smith 1963 (Fig. 107); Taube 2004: 171 (Fig. 81b)

DESCRIPTION: La Venta Altar 7 consists of a heavily damaged throne sculpture depicting the face of an adult human figure emerging from a shallow niche. This niche figure is depicted wearing a duck-bill mask over its mouth. Vestiges of various other elements are visible on both the front facet and the left and right profiles of the throne. These remnants of low relief carvings include depictions of two human figures on each side of the niche figure, an avian claw on the left side, and two corpulent faces similar to the so-called "potbelly" sculptures (compare to Guernsey 2010: 222, Fig. 9.5) on the right side and posterior facet of the monument. Six small pits and 29 grooves are also present on the upper surface of this throne.

LA VENTA ALTAR 8 (Figure A.5)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: 30 meters north of Structure D-8, at the base of La Venta Stela 4 (González Lauck 1988:153)
CURRENT LOC: La Venta Site Museum (La Venta, Tabasco)
OTHER ID: ------
CHRONOLOGY: Early to Middle Formative periods (1100-400 BC)
DIMENSIONS: 156 cm x 126 cm x 88 cm
MEDIUM: basalt
MONUMENT TYPE: throne
PIT AND GROOVE WORK: pits and grooves (superior facet and right profile of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: -----
PHOTOS: González Lauck 1988 (Cover Illustration); Tate 2011: 207 (Fig. 7.6d)
DRAWINGS: González Lauck 1988: 154 (Fig. 4); Tate 2011: 208 (Fig. 7.7); Taube 1995: 93 (Fig. 13e)
DESCRIPTION: La Venta Altar 8 consists of a heavily damaged throne sculpture with a low relief carving of a niche surrounded by various vegetal motifs and volutes. The right side of the monument also contains the vestiges of two human figures. There are 16 small pits and approximately 75 grooves visible on the superior surface and right sides of this monument.

LA VENTA STELA 1 (Figure A.6)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: patio of Complex A
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 251 cm x 79 cm x 66 cm
MEDIUM: basalt
MONUMENT TYPE: stela
PIT AND GROOVE WORK: grooves only (posterior facet of the monument)
TECHNIQUE: high relief carving of the niche figure; low relief carving of other details
TAPHONOMY: toppled and partially buried, found lying face up (Joyce and Knox 1931, Fig. 3)
PHOTOS: Berrin and Fields (eds.) 2010 (Plate 63); de la Fuente 1972: 30, 1973 (Illustration 8), 1977 (Illustration 44); Drucker, Heizer, and Squier 1959 (Plate 56a); González Lauck 2007: 52; Joyce and Knox 1931: 18 (Figs. 2-3); Milbrath 1979: 60 (Fig. 40); Ochoa and Castro-Leal 1986: 62; Piña Chan 1989: 97 (Fig. 30); Pool 2007: 168 (Fig. 5.11); Reilly 2010: 50 (Fig. 21); Stirling 1943 (Plate 33a); Tate 2011: 173 (Fig. 5.35)
DRAWINGS: Benson 1996: 18 (Fig. 2); Blom and La Farge 1926-1927: 83 (Fig. 67); de la Fuente 1973: 35; Drucker 1952: 188 (Fig. 56); Magni 2003: 37 (Fig. 5); Ochoa and Castro-Leal 1986: 63; Tate 2011: 8 (Fig. 1.6); Wicke 1971: 8 (Fig. 5)
DESCRIPTION: La Venta Stela 1 depicts a standing figure at the entrance of a tall niche. The figure, possibly female, is rendered in high relief and wears a skirt and banded headdress but is otherwise nude. The niche is decorated with an upper band carved in low relief. The band consists of denticulated U-shaped designs reminiscent of thrones and which may represent a "skyband" or schematic representation of the earth. One groove can be seen on the posterior side of Stela 1, along with two large vertically-oriented slots.

LA VENTA STELA 2 (Figure A.7)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: south of the Great Pyramid
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: La Venta Stela A (Covarrubias 1946: 90)
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 257 cm x 209 cm x 90 cm
MEDIUM: basalt
MONUMENT TYPE: stela

PIT AND GROOVE WORK: pits only (right profile of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: found partially buried and toppled (Stirling 1943, Plate 34)
PHOTOS: Benson 1976: 75 (Fig. 8); Bernal 1969 (Plate 17), 1979: 66; Covarrubias 1946: 90 (Plate 3); de la Fuente 1972: 33, 1973 (Illustration 9), 1977 (Plate 15, Illustration 45), 2001: 34 (Fig. 14); Diehl 2004: 116 (Fig. 75); González Lauck 1994: 96 (Fig. 6.2), 2010: 140 (Fig. 6.6); Heizer 1967: 43 (Plate 2); Magni 1999: 53 (Plate IX), 2003 (Color Plate); Milbrath 1979: 68 (Fig. 68); Ochoa and Castro-Leal 1986: 49; Piña Chan 1964 (Color Plate); Pool 2007: 168 (Fig. 5.11); Reilly 2010: 44 (Fig. 16); Soustelle 1995 (Plate 56); Stirling 1943 (Plate 34) Tate 2011: 204 (Fig. 7.2c), 259 (Fig. 8.39)
DRAWINGS: Blom and La Farge 1926-1927: 85 (Figs. 69-72); Clark, Guernsey, and Arroyo 2010: 11 (Fig. 1.6b); Covarrubias 1957: 68 (Fig.28); de la Fuente 1973: 40; Diehl 2004: 116 (Fig. 75); Drucker 1952: 174 (Fig. 49), 188 (Fig. 56); González Lauck 1994: 96 (Fig. 6.3); Gruener 1987: 406 (Fig. 45); Heizer 1967: 45-46, 49-50 (Figs. 2-3, 6-7); Joralemon 1971: 19 (Fig. 2), 72 (Fig. 210a), 1976: 43 (Figs. 11a and 11c); Ochoa and Castro-Leal 1986: 50; Reilly 19: 9 (Figs. 9a and 9b); Smith 1963: 211 (Fig. 408); Taube 2004: 14 (Fig. 5a); Wicke 1971: 12 (Fig. 7)
DESCRIPTION: La Venta Stela 2 is a rounded stela that depicts a complex scene in which a central, standing figure is surrounded by six smaller, masked human figures. The central figure is distinguished by its elaborate costume, which includes leg bands, a skirt, armbands, a collar, a rectangular pectoral and a tall ornate headdress. The headdress is decorated with a large diadem depicting the remnants of a face, numerous tassels, and a large feline claw. The central figure is also shown holding a curved object, possibly a club. The smaller, peripheral figures are each shown wearing large belts, leg bands, and loincloths. Each has a unique zoomorphic mask bearing either feline or avian features. Many are also shown with ornate headdresses although many of their elements are now eroded. Finally, each figure is also depicted holding onto various objects or clubs. The back of the stela is undressed and its right side is marked by four pits.

LA VENTA STELA 4 (Figure A.8)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: 30 meters north of Structure D-8 (González Lauck 1988: 153)
CURRENT LOC: unknown
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 170 cm (height)
MEDIUM: basalt
MONUMENT TYPE: stela
PIT AND GROOVE WORK: pits and grooves (base of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: found fully buried (Stirling 1943: 52, Plates 33c and 33d)
PHOTOS: Stirling 1943: 52 (Plates 33c and 33d)
DRAWINGS: ------
DESCRIPTION: La Venta Stela 4 is a large rectangular monument bearing a low relief carving consisting of an incised circle surrounded by at least three curvilinear rays within a rectangular panel. Much of this design is eroded. The base of this stela also contains eight pits and 97 grooves (Stirling 1943, Plate 33d).

LA VENTA MONUMENT 1 (Figure A.9)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: south of the Great Pyramid, near Stela 2
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: La Venta Monument A (Covarrubias 1946)
CHRONOLOGY: Early to Middle Formative periods (1100-400 BC)
DIMENSIONS: 241 cm x 640 cm (circumference)
MEDIUM: basalt
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (superior facet of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: found partially buried but not toppled (Blom and La Farge 1926-1927: 87, Fig. 76)
PHOTOS: Bernal 1969 (Plate 8); Blom and La Farge 1926-1927: 87 (Fig. 76); Clewlow, Cowan, O'Connell and Benemann 1967: 101 (Plate 1), 103 (Plates 2a and 2b), 109 (Plate 6a); Coe 1965a: 688 Fig. 4); Covarrubias 1944: 27, 1946 (Plate 1); de la Fuente 1972: 23, 1973 (Illustration 13), 1977 (Plates 10-11, Illustration 43), 1992 (Plates 3, 20-21); Diehl 2004 (Plate V); Easby and Scott 1970: 70 (Fig. 3); González Calderón 1977: 65 (Foto 88); González Lauck 1994: 107 (Fig. 6.2c), 2007:51; Grove and Gillespie 1984: 29; Ochoa and Castro-Leal 1986: 52; Piña Chan 1989 (Plates 48-49); Steede and Athy 1998: 323 (Fig. 2a), 325 (Fig. 3a), 326 (Fig. 4); Stirling 1943 (Plate 42a) Tate 2011: 204 (Fig. 7.2a)
DRAWINGS: Clewlow, Cowan, O'Connell, and Benemann 1967: 100 (Fig. 2), 102 (Figs. 3a and

3b); de la Fuente 1973: 49, 1977 (Fig. 7); Drucker 1952: 188 (Fig. 56); Joralemon 1971: 19 (Fig. 1); Steede and Athy 1998: 328 (Fig. 5), 2000 (Fig. 5); Wicke 1971: 11 (Fig. 6)
DESCRIPTION: There is a general archaeological consensus that all of the colossal heads found in the southern Gulf Coast lowlands were portraits of specific rulers (see e.g. Coe and Diehl 1980; Grove and Gillespie 1984; Stirling 1965). La Venta Monument 1, for instance, depicts the slightly prognathic face of a corpulent man with a broad nose and prominent lips. The irises of the eyes point slightly inward. The ears are pierced with large square ear ornaments decorated with a star-like motif and are framed by the chinstrap of the figure's headdress. The headdress is decorated with one large band of interwoven material and an insignia reminiscent of an animal paw that extends from the front of the headdress towards the crown of the head. The superior surface of this colossal head is marked by 13 small pits and 48 grooves (Steede and Athy 2000, Fig. 5).

LA VENTA MONUMENT 2 (Figure A.10)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: part of a linear arrangement with Monuments 3 and 4 south of the Great Pyramid
CURRENT LOC: Regional Museum of Anthropology Carlos Pellicer Cámara (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Early to Middle Formative periods (1100-400 BC)
DIMENSIONS: 163 cm x 424 cm (circumference)
MEDIUM: basalt
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (superior and posterior facets of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: found partially buried (Stirling 1943, Plate 43)
PHOTOS: Bernal 1969 (Plate 9); Clewlow, Cowan, O'Connell, and Benemann 1967: 105 (Plate 3), 107 (Plates 4a and 4b), 108 (Plates 5a and 5b); de la Fuente 1972: 23, 1973 (Illustration 14), 1977 (Illustration 41), 1992 (Plates 4-5, 23-24), 1994: 217 (Fig. 13.13); Piña Chan 1989 (Plate 43); Steede and Athy 1998: 323 (Fig. 2b); Stirling 1943 (Plates 43a and 43b); Tate 2011: 210 (Fig. 7.11, center), 253 (Fig. 8.34, center)
DRAWINGS: Baudez 2012:12, Fig. 3c; Clewlow, Cowan, O'Connell, and Benemann 1967: 104 (Fig. 4), 106 (Figs. 5a and 5b); de la Fuente 1973: 51-52, 1977 (Fig. 5c); Drucker 1952: 188 (Fig. 56); González Lauck 1995: 40, 2004: 86 (Fig.2), 2010: 133 (Fig. 6.2); Steede and Athy 1998: 329 (Fig. 6), 2000 (Fig. 6)
DESCRIPTION: La Venta Monument 2 portrays the flat face of a man with a broad, flaring nose, prominent cheeks, and large lips. Four teeth are visible in the open mouth and the irises of the eyes appear to be raised discs that point slightly inward. The ears are decorated with circular ear ornaments attached to elements (possibly feathers) that flare backward. The ears are located behind the chinstrap of the figure's headdress. The headdress is fairly plain and marked by two large horizontal elements, possibly feathers. The crown of this colossal head and its back contain a mixture of 48 small pits and 58 grooves (Steede and Athy 2000, Fig. 6).

LA VENTA MONUMENT 3 (Figure A.11)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: part of a linear arrangement with Monuments 2 and 4 south of the Great Pyramid
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Early to Middle Formative periods (1100-400 BC)
DIMENSIONS: 198 cm x 405 cm (circumference)
MEDIUM: basalt
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (superior facet, front facet and right profile of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: found in a toppled state (Stirling 1943, Plate 42b)
PHOTOS: Clewlow, Cowan, O'Connell, and Benemann 1967: 111 (Plate 7), 113 (Plates 8a and 8b); de la Fuente 1972: 24, 1973 (Illustration 15), 1977 (Illustration 42), 1992 (Plate 25); González Lauck 1994: 107 (Fig. 6.22); Ochoa and Castro-Leal 1986: 73; Steede and Athy 1998: 323 (Fig. 2c); Stirling 1943 (Plate 42b); Tate 2011: 210 (Fig. 7.11, right), 213 (Fig. 7.13), 253 (Fig. 8.34, right)
DRAWINGS: Clewlow, Cowan, O'Connell, and Benemann 1967: 110 (Fig. 6), 112 (Figs. 7a and 7b); de la Fuente 1973: 54, 1977 (Fig. 6); Drucker 1952: 188 (Fig. 56); González Lauck 2004: 86 (Fig. 2), 2010: 133 (Fig. 6.2); Magni 2003: 237 (Fig. 54); Steede and Athy 1998: 330 (Fig. 7), 2000 (Fig. 7)
DESCRIPTION: La Venta Monument 3 is a colossal head sculpture that renders the portrait of a flat-faced man with a broad, flaring nose and large lips. The remnants of teeth are still visible in the open mouth of the figure and the irises of the eyes point slightly inward. The ears are obscured by the

chinstraps of the headdress, but are pierced with circular ear ornaments. The headdress is fairly plain and undecorated. This colossal head is also marked by 74 pits (18 of which have dimples) and 140 grooves on its face, superior surface, and right profile (Steede and Athy 2000, Fig. 7).

LA VENTA MONUMENT 4 (Figure A.12)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: part of a linear arrangement with Monuments 2 and 3 south of the Great Pyramid
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Early to Middle Formative periods (1100-400 BC)
DIMENSIONS: 226 cm x 650 cm (circumference)
MEDIUM: basalt
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (superior facet, left and right profiles of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: found partially buried (Stirling 1943, Plate 44)
PHOTOS: de la Fuente 1972: 25, 1973 (Illustration 16), 1977 (Illustration 40), 1992 (Plates 4, 22), 1994: 219 (Fig. 13.14); Diehl 2004: 75 (Fig. 37); Ochoa and Castro-Leal 1986: 75; Piña Chan 1989 (Plate 45); Steede and Athy 1998: 323 (Fig. 2d); Stirling 1943 (Plate 44), 1965: 717 (Fig. 1); Tate 2011: 210 (Fig. 7.11, left), 253 (Fig. 8.34, left)
DRAWINGS: de la Fuente 1973: 56-57, 1977 (Fig. 4b); Drucker 1952: 188 (Fig. 56); González Lauck 2004: 86 (Fig. 2), 2010: 133 (Fig. 6.2); Luckert 1976: 79-80 (Fig. 25-26); Steede and Athy 1998: 331 (Fig. 8), 2000 (Fig. 8); Tate 2011: 56 (Fig. 3.29)
DESCRIPTION: La Venta Monument 4 depicts of a man with a prognathic face, prominent cheeks, broad nose and large lips. Four teeth project from the bottom of the upper lip and the irises of the eyes point slightly inward. The ears are highly eroded, but appear to have been decorated with rounded square ear ornaments. One of the ornaments has a cross motif surrounded by concentric circles. The headdress of this colossal head is very elaborate and consists of several bands decorated with a claw-like insignia on the crown and two squares on each side. The left side of the headdress is also shown with a sinuous motif or volute. There are 27 small pits and 48 grooves visible on the superior surface, right profile, and left profile of this colossal head (Steede and Athy 2000, Fig. 8).

LA VENTA MONUMENT 13 (Figure A.13)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: inside the enclosure surrounded by basalt columns (Mound A-1) (de la Fuente 1973: 262)
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: The Traveler; The Ambassador (Ochoa and Castro-Leal 1986: 69)
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 72 cm x 80 cm (diameter)
MEDIUM: basalt
MONUMENT TYPE: columnar sculpture
PIT AND GROOVE WORK: pits and grooves (superior facet and left profile of the monument)
TECHNIQUE: low relief carving and abrasion (hammer-smoothed?)
TAPHONOMY: found partially buried in a sand floor on top of the reed clay core that sloped from Mound A-2 (Drucker 1952:39)
PHOTOS: Bernal 1969 (Plate 29); de la Fuente 1972: 31, 1973 (Illustration 203), 1977 (Illustration 35); Drucker 1952 (Plate 63); González Lauck 1995: 40, 2007: 54; Ochoa and Castro-Leal 1986: 69; Piña Chan 1989 (Plate 91); Soustelle 1995 (Plate 55); Wicke 1971: 104 (Fig. 33)
DRAWINGS: Athy 1993: 137 (Fig. B); Coe 1968a: 148; de la Fuente 1973: 263; Drucker 1952: 203 (Fig. 61); Garcia-Gallo 2008: 611 (Figs. 2-3), 618-620 (Figs. 5-7); González Calderón 1977: 156 (Foto 251); Houston 2004: 277 (Fig. 10.1b); Joralemon 1971: 14 (Fig. 4); Lowe 1989: 64 (Fig. 4.11a), 1998: 31 (Fig. 6-B); Ochoa and Castro-Leal 1986: 70; Piña Chan 1964 (Cover Illustration); Smith 1963: 209 (Fig. 407); Tate 2011: 250 (Fig. 8.30), 271 (Fig. 9.4)
DESCRIPTION: La Venta Monument 13 is a polished and smoothed column that bears a low relief carving on its cross-section, henceforth its front facet. The carving depicts a human figure rendered in profile view. The figure is shown wearing a three-banded belt, loincloth, an armband, a large headdress, a beaded necklace, and tasseled foot-coverings. The figure is also holding a banner in his left hand. There are also four glyph-like designs on this monument (Garcia-Gallo 2008; Houston 2004). There is a left foot at the figure's right and, to the figure's left, there is a vertical column containing three glyphs – a circle, tri-petal flower, and an avian head with a curved beak. This monument also contains ten small pits and 17 grooves on its superior facet and left profile.

LA VENTA MONUMENT 18 (Figure A.14)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: extreme south of the central group of La Venta (de la Fuente 1973: 75)
CURRENT LOC: unknown, possibly Campo Militar 30 B (Cárdenas, Tabasco) (Pohorilenko 1997:190)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: ------
MEDIUM: ------
MONUMENT TYPE: full-round sculpture (fragment)
PIT AND GROOVE WORK: pits only (various facets of the monument)
TECHNIQUE: pecking and abrasion (hammer-smoothed)
TAPHONOMY: monument consists of four fragments, possible instance of monument mutilation
PHOTOS: Pohorilenko 1997: 192 (Fotos 6 and 7)
DRAWINGS: ------
DESCRIPTION: La Venta Monument 18 consists of four sculptural fragments that may have originally depicted an animal figure, possibly a monkey (Pohorilenko 1997: 190). At least two pits (one with a dimple and one without a dimple) are visible on two of its fragments.

LA VENTA MONUMENT 32 (Figure A.15)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: ------
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 64 cm x 33 cm (diameter)
MEDIUM: welded tuff or ignimbrite
MONUMENT TYPE: column
PIT AND GROOVE WORK: pits only (front facet of the monument)
TECHNIQUE: pecking and abrasion (hammer-smoothed)
TAPHONOMY: ------
PHOTOS: Clewlow and Corson 1968: 197 (Plate 9e)
DRAWINGS: ------
DESCRIPTION: Originally found during the 1968 University of California expedition to La Venta (Clewlow and Corson 1968: 173), this monument is a cylindrical stone drum. It has two pits (one with a dimple and one without a dimple). These appear on the front and side of the monument.

LA VENTA MONUMENT 36a (Figure A.16)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: found between Complex B and C.
CURRENT LOC: ------
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 163 cm x 77 cm x 49 cm
MEDIUM: greenish schist
MONUMENT TYPE: undressed stone
PIT AND GROOVE WORK: grooves only (front facet of the monument)
TECHNIQUE: ------
TAPHONOMY: monument is fractured, originally attached to Monument 36b
PHOTOS: Clewlow and Corson 1968: 198 (Plate 10b)
DRAWINGS: ------
DESCRIPTION: This is a large, unworked boulder with 32 randomly placed grooves on its front facet. It was first found during the 1968 University of California expedition to La Venta (Clewlow and Corson 1968: 174). The rest of the monument has no noticeable markings, but it is roughly fractured at one end.

LA VENTA MONUMENT 36b (Figure A.17)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: found lying 5.3 meters due north of Monument 36a
CURRENT LOC: ------
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 162 cm x 87 cm x 49 cm
MEDIUM: greenish schist
MONUMENT TYPE: undressed stone
PIT AND GROOVE WORK: grooves only (front facet of the monument)
TECHNIQUE: ------
TAPHONOMY: monument is fractured, originally attached to Monument 36b
PHOTOS: Clewlow and Corson 1968: 198 (Plate 10e)
DRAWINGS: ------
DESCRIPTION: This large stone was also found during the 1968 University of Califonria expedition to La Venta (Clewlow and Corson 1968: 174). It appears to have originally been part of the same piece as Monument 36a. Its front facet contains 27 grooves.

LA VENTA MONUMENT 44 (Figure A.18)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: found on the Stirling Acropolis (de la Fuente 1973:96)
CURRENT LOC: Regional Museum of Anthropology Carlos Pellicer Cámara (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 55 cm x 43 cm x 50 cm
MEDIUM: basalt
MONUMENT TYPE: full-round sculpture (fragment)
PIT AND GROOVE WORK: grooves only (superior facet of the monument)
TECHNIQUE: high relief carving with low relief and incised details
TAPHONOMY: monument consists of a decapitated head, possible instance of monument mutilation
PHOTOS: Clewlow 1968 (Foto 35); Clewlow and Corson 1968: 200 (Plates 11e and 12a); de la Fuente 1972: 18, 1973 (Illustration 55), 1977 Illustration 37), 2001: 30 (Fig. 7); González Lauck 1994: 107 (Fig. 6.23); Heizer, Drucker and Graham 1968 (Plate 18); Piña Chan 1989: 169 (Fig. 44); Reilly 2010: 47 (Fig. 18); Tate 2011: 52 (Fig. 3.24), 254 (Fig. 8.23)
DRAWINGS: Bonifaz Nuño 1996 (Fig. 59); Clewlow 1968 (Figs. 8-10); de la Fuente 1973: 97, 1976 (Figs. 4a and 8c); Schele 1995: 108 (Fig. 9b); Taube 2004: 108 (Fig. 49b)
DESCRIPTION: This monument consists of the decapitated head of a full-round sculpture of a human figure similar to San Martín Pajapan Monument 1 and La Venta Monument 77 (de la Fuente 1976). Its face features a broad nose and prominent lips. An elaborate, bifurcated and backturned headdress with tassels is situated on top of the head and is decorated with a large square depiction of a snarling face with both feline and human traits and two so-called "were-jaguar" faces below each ear of the main ornament. De la Fuente (1981: 93, 1996: 46-47) suggests that the main theme of this monument is the lord under supernatural protection because the human figure is situated underneath a composite creature (Pool 2007: 118); while Taube (2004: 99) suggests that the main headdress ornament is the face of a maize god. Two grooves appear on top of the headdress, toward the rear.

LA VENTA MONUMENT 47 (Figure A.19)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: south of the Great Pyramid, near La Venta Monument 1 and La Venta Stela 2 (de la Fuente 1973: 99)
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 350 cm x 140 cm (circumference)
MEDIUM: reddish basalt
MONUMENT TYPE: plain stela or column
PIT AND GROOVE WORK: grooves only (front facet of the monument)
TECHNIQUE: pecking and abrasion (hammer-smoothed?)
TAPHONOMY: ------
PHOTOS: Clewlow and Corson 1968: 200 (Plate 12f); Tate 2011: 204 (Fig. 7.2d)
DRAWINGS: ------
DESCRIPTION: This monument consists of a long column or plain stela that has been worked smooth. Five small grooves are located near the base of the front of the column. It was documented by the 1968 University of California expedition to La Venta (Clewlow and Corson 1968:177).

LA VENTA MONUMENT 52 (Figure A.20)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: Mound D-7, south of the Great Pyramid, with Monuments 53 and 54 (Gallegos Gómora 1990)
CURRENT LOC: La Venta Site Museum (La Venta, Tabasco)
OTHER ID: Monument "A" (Stirling 1968: 35); colossal fetus (Tate 2011:204)
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 370 cm x 210 cm x 130 cm
MEDIUM: sandstone
MONUMENT TYPE: full-round sculpture
PIT AND GROOVE WORK: pits and grooves (right profile of the monument)
TECHNIQUE: high relief carving
TAPHONOMY: found in a toppled state in a supine position (de la Fuente 1973: 101; Stirling 1968: 37-39)
PHOTOS: Stirling 1968: 37 (Plate 1)
DRAWINGS: Baudez 2012:10, Fig. 1b; González Lauck 2004: 87 (Fig. 3), 2010: 134 (Fig. 6.3); Tate 2011: 204 (Fig. 7.3b), 221 (Fig. 8.2b)
DESCRIPTION: Originally described by Blom and La Farge (1926-1927: 89) and then excavated by Matthew Stirling in 1942 (Stirling 1968: 35), La

Venta Monument 52 is a large full-round sculpture that depicts a human figure with a large face and headdress. Tate and Bendersky (1999) argue that this sculpture represents a human fetus. Most of the figure's facial details are highly eroded, but the remnants of eyes and a nose are still visible. Although also highly eroded, the headdress appears to have been decorated with a large rectangular diadem. The figure is also shown holding an object, possibly a ceremonial bar. Approximately 13 pits and 14 grooves occur on this sculpture's right profile.

LA VENTA MONUMENT 53 (Figure A.21)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: Mound D-7, south of the Great Pyramid, with Monuments 52 and 54 (Gallegos Gómora 1990)
CURRENT LOC: La Venta Site Museum (La Venta, Tabasco)
OTHER ID: Monument "B" (Stirling 1968: 35); colossal fetus (Tate 2011:204)
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 204 cm x 187 cm x 100 cm
MEDIUM: sandstone
MONUMENT TYPE: full-round sculpture
PIT AND GROOVE WORK: grooves only (right profile of the monument)
TECHNIQUE: high relief carving
TAPHONOMY: found in a toppled state lying face up (de la Fuente 1973: 102; Stirling 1968: 37-39)
PHOTOS: Gallegos Gómora 1990: 22 (Fotos 2-3); Stirling 1968: 38 (Plate 2)
DRAWINGS: Baudez 2012:10, Fig. 1b; González Lauck 2004: 87 (Fig. 3), 2010: 134 (Fig. 6.3)
DESCRIPTION: Like its neighbor, La Venta Monument 53 was excavated by Matthew Stirling in 1942 (Stirling 1968: 35). It is a large full- round sculpture that depicts a human figure with a large face and headdress, possibly a human fetus (Tate and Bendersky 1999). Some of the details of the face are still visible, including a downturned mouth, slit-like eyes, and portions of a broad nose. The headdress with very weathered and part of an ear ornament is visible on the figure's right side. Three grooves are visible on this monument's right side as well.

LA VENTA MONUMENT 54 (Figure A.22)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: Mound D-7, south of the Great Pyramid, with Monuments 52 and 53 (Gallegos Gómora 1990)
CURRENT LOC: La Venta Site Museum (La Venta, Tabasco)
OTHER ID: Monument "C" (Stirling 1968: 35)**;** colossal fetus (Tate 2011: 204)
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 375 cm x 202 cm x 141 cm
MEDIUM: sandstone
MONUMENT TYPE: full-round sculpture
PIT AND GROOVE WORK: pits and grooves (front facet and left profile of the monument)
TECHNIQUE: high relief carving
TAPHONOMY: found in a toppled state lying face up (see de la Fuente 1973: 102; Stirling 1968: 37-39)
PHOTOS: Stirling 1968: 39 (Plate 3)
DRAWINGS: Baudez 2012:10, Fig. 1b; González Lauck 2004: 87 (Fig. 3), 2010: 134 (Fig. 6.3); Tate 2011: 204 (Fig. 7.3c), 221 (Fig. 8.2c)
DESCRIPTION: La Venta Monument 54 is a large full-round sculpture that depicts a human figure with a large face and headdress. Tate and Bendersky (1999) suggest that this sculpture portrays a human fetus. Most of the details of the face and headdress are no longer visible. The remains of two arms or hands can also be seen below the figure's face. A mixture of one pit and 19 grooves are apparent on this monument's front facet and left side. It was originally excavated by Matthew Stirling in 1942 (Stirling 1968: 35).

LA VENTA MONUMENT 57 (Figure A.23)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: central area of the Stirling Acropolis (de la Fuente 1973: 105)
CURRENT LOC: Regional Museum of Anthropology Carlos Pellicer Cámara (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 73 cm x 52 cm x 28 cm
MEDIUM: greenish serpentine-like stone
MONUMENT TYPE: full-round sculpture (fragment)
PIT AND GROOVE WORK: grooves only (front facet of the monument)
TECHNIQUE: pecking and abrasion (hammer-smoothed)
TAPHONOMY: ------
PHOTOS: Clewlow and Corson 1968: 201 (Plate 13a)
DRAWINGS: ------
DESCRIPTION: This monument was described by the 1968 University of California expedition to La Venta (Clewlow and Corson 1968: 178). It appears to have originally been a full round sculpture of a human or animal figure, with the

faint vestiges of a pectoral ornament, but has since been decapitated and all of its surfaces smoothly polished. Ten grooves are visible on this monument as well.

LA VENTA MONUMENT 59 (Figure A.24)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: between Complexes B and C (de la Fuente 1973: 106)
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 105 cm x 95 cm x 66 cm
MEDIUM: basalt
MONUMENT TYPE: bench (possibly a throne)
PIT AND GROOVE WORK: pits and grooves (superior facet of the monument)
TECHNIQUE: high relief carving with details rendered in low relief
TAPHONOMY: ------
PHOTOS: Berrin and Fields (eds.) 2010 (Plates 10-11); Clewlow and Corson 1968: 201 (Plate 13c); de la Fuente 1972: 18, 1973 (Illustration 70); Ochoa and Castro-Leal 1986: 38-39; Piña Chan 1989: 83 (Fig. 24); Reilly 1994: 238, 1995: 42 (Fig. 33)
DRAWINGS: de la Fuente 1973: 107
DESCRIPTION: Originally documented by the University of California during its 1968 expedition to La Venta (Clewlow and Corson 1968: 178-179), this monument depicts a crouching jaguar body with an anthropomorphic face and head supporting a large table-top platform. The face on the figure has many features typical of Olmec-style art including slit-like eyes, a downturned mouth with large curvilinear fangs, a broad nose, and a nasal ornament. The figure is also decorated with two circular ear ornaments. Ten small circular pits and 36 grooves are located on the surface of the table-top platform.

LA VENTA MONUMENT 62 (Figure A.25)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: ------
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 663 cm x 135 cm (circumference)
MEDIUM: basalt
MONUMENT TYPE: column
PIT AND GROOVE WORK: grooves (all exposed facets of the monument)
TECHNIQUE: pecking and abrasion
TAPHONOMY: ------
PHOTOS: Clewlow and Corson 1968: 201 (Plate 13e)
DRAWINGS: Tate 2011: 206 (Fig. 7.5e)
DESCRIPTION: This monument is a long basalt column with at least 23 grooves appearing at random along its exposed upper surfaces. It was documented by the 1968 University of California expedition to La Venta (Clewlow and Corson 1968: 179).

LA VENTA MONUMENT 63 (Figure A.26)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: ------
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 256 cm x 75 cm x 45 cm
MEDIUM: greenish blue basalt
MONUMENT TYPE: stela
PIT AND GROOVE WORK: pits and grooves (left profile of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: ------
PHOTOS: Athy 1993: 139-141, 143 (Figs. C-D, E); Berrin and Fields (eds.) 2010 (Plate 147); de la Fuente 1973 (Illustration 204); González Lauck 2007: 54; Ochoa and Castro-Leal 1986: 54; Piña Chan 1989 (Plates 78-79); Tate 2011: 47 (Fig. 8.24); Williams and Heizer 1965 (Plate 2d)
DRAWINGS: Arnold 2005: 19 (Fig. 9); Bonifaz Nuño 1996 (Fig. 62); Clark, Guernsey, and Arroyo 2010: 12 (Fig. 1.7c); Clewlow 1974: 304 (Fig. 49); Cyphers 2004: 121 (Fig. 69); de la Fuente 1973:265; Joralemon 1971: 44 (Fig. 132), 1976: 42 (Figs. 9i and 24l); Magni 1995a: 349 (Fig. 11), 1996: 66 (Fig. 1b); Ochoa and Castro-Leal 1986: 54; Williams and Heizer 1965: 19 (Fig. 5)
DESCRIPTION: Originally described by Carlos Pellicer in 1959, this monument was later discussed by Howel Williams and Robert Heizer (1965). It depicts a human figure holding a large composite creature. In addition to its serpentine body, the composite creature has the piscine features of a shark such as a protruding upper jaw, a bulbous snout, a dorsal fin, a pectoral fin, and possibly a pelvic or anal fin (Arnold 2005: 18). The human figure has a three-banded belt and is shown wearing a hip-cloth and a headdress with top-knots. The left profile of this stela contains three small pits and 32 grooves.

LA VENTA MONUMENT 67 (Figure A.27)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: ------
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 90 cm x 207 cm x 90 cm
MEDIUM: basalt
MONUMENT TYPE: undressed block (possibly a crude bench)
PIT AND GROOVE WORK: grooves only (front facet of the monument)
TECHNIQUE: pecking?
TAPHONOMY: ------
PHOTOS: Clewlow and Corson 1968: 202 (Plate 14c); Ochoa and Castro-Leal 1986: 64; Piña Chan 1989 (Plate 81)
DRAWINGS: ------
DESCRIPTION: This large block of basalt was pecked and hammered into its present shape as a bench-like object. Apart from a single groove, no other form of human modification is visible on this monument. It was originally described by the 1968 University of California expedition to La Venta (Clewlow and Corson 1968: 180).

LA VENTA MONUMENT 68 (Figure A.28)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: ------
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 185 cm x 152 cm (diameter)
MEDIUM: basalt
MONUMENT TYPE: colossal head (unfinished?)
PIT AND GROOVE WORK: pits and grooves (front facet of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: ------
PHOTOS: Magni 2003 (Color Plate); Ochoa and Castro-Leal 1986: 76; Williams and Heizer 1965 (Plate 2c)
DRAWINGS: ------
DESCRIPTION: Previously described as an unworked boulder (Clewlow and Corson 1968: 180; Williams and Heizer 1965: 19), Monument 68 actually consists of a circular boulder with a rudimentary carving of a human face on its frontal facet. The carved surface of this monument also contains four pits and approximately 78 grooves.

LA VENTA MONUMENT 69 (Figure A.29)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: ------
CURRENT LOC: Regional Museum of Anthropology Carlos Pellicer Cámara (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 100 cm x 44 cm x 19 cm
MEDIUM: greenish schist
MONUMENT TYPE: stela (fragment)
PIT AND GROOVE WORK: grooves only (front facet of the monument)
TECHNIQUE: some low relief carving
TAPHONOMY: ------
PHOTOS: Clewlow and Corson 1968: 202 (Plate 14d)
DRAWINGS: ------
DESCRIPTION: As described by the 1968 University of California expedition (Clewlow and Corson 1968: 180), this monument is a broken piece of schist that has been badly fractured and scaled. Its front surface contains the remnants of at least two low relief designs. The first carving is a small square broken into three horizontal bands; the second carving consists of the fragment of a shallow U-shaped design. This monument is also marked by two grooves on its front surface.

LA VENTA MONUMENT 78 (Figure A.30)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: eastern part of Complex C (Ochoa and Castro-Leal 1986: 30)
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 92 cm x 74 cm
MEDIUM: basalt
MONUMENT TYPE: full-round sculpture
PIT AND GROOVE WORK: grooves only (front facet and right profile of the monument)
TECHNIQUE: high relief carving with details rendered in low relief
TAPHONOMY: ------
PHOTOS: Ochoa and Castro-Leal 1986: 30; Pohorilenko 1997: 194-195 (Fotos 9-11)
DRAWINGS: Taube 2000: 307 (Fig. 10d)
DESCRIPTION: This monument consists of a human head that was likely decapitated from a full-round sculpture of a human figure. The eye is decorated with the vestiges of a flame eyebrow and a U-shaped element can be seen on the right side of

the head. Two grooves appear on the frontal facet and right profile of the head.

LA VENTA UNNUMBERED MONUMENT (Figure A.31)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: ------
CURRENT LOC: La Venta Park Museum (Villahermosa, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: ------
MEDIUM: ------
MONUMENT TYPE: stela (fragment)
PIT AND GROOVE WORK: pits and grooves (front facet of the monument)
TECHNIQUE: pecking and abrasion (hammer-smoothed)
TAPHONOMY: ------
PHOTOS: ------
DRAWINGS: ------
DESCRIPTION: This monument was not labeled at the La Venta Park Museum, but is located with a group of smaller sculptures. This small monument consists of a stela fragment that is marked by at least three pits and 2 grooves on its front facet. It is difficult to distinguish the grooves from the incised lines that make up the remains of the low relief carving that once adorned the stela.

LA VENTA UNNUMBERED BENCH (Figure A.32)

REGION: southern Gulf Coast lowlands
GEN PROV: La Venta, Tabasco
SPE PROV: ------
CURRENT LOC: La Venta Site Museum (La Venta, Tabasco)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: ------
MEDIUM: basalt
MONUMENT TYPE: bench (fragment)
PIT AND GROOVE WORK: pits and grooves (superior facet of the monument)
TECHNIQUE: pecking (hammer-smoothed?)
TAPHONOMY: part of the bench has broken off and is missing
PHOTOS: ------
DRAWINGS: ------
DESCRIPTION: This monument consists of a fragment of bench-like sculpture with the major portion of its seat or upper platform intact as well as one of its two large legs. The upper surface of the seat or platform contains two small pits and 26 grooves. Apart from these markings, there are no other forms of decoration visible.

SAN LORENZO MONUMENT 1 (Figure A.33)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: lying face up on the slope of a small arroyo approximately 92 meters (100 yards) southeast of Mound C3-1 (Coe and Diehl 1980: 299)
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 10958
OTHER ID: El Rey (Cyphers 2004: 39); San Lorenzo Colossal Head 1
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 285 cm x 211 cm x 590 cm (circumference)
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (front facet, posterior facet, and left profile of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: toppled and landed facing upward (Stirling 1955, Plates 5 and 6) on top of Early Formative sherds.
PHOTOS: Acosta Lagunes 1992: 24-25; Anonymous 1950: 283; Bernal 1969 (Plate 10); Berrin and Fields (eds.) 2010: 18 (Fig. 2); Beverido Pereau 1996: 603-605 (Figs. 25-27); Clewlow, Cowan, O'Connell, and Benemann 1967: 127 (Plate 16), 129 (Plate 17), 131 (Plates 18a and 18b); Coe 1968a: 38, 1992:40-41; Coe and Diehl 1980 (Color Plate); Cyphers 1994b: 56 (Fig. 4.16), 1995b: 14 (Fig. 8), 1997c: 230 (Fig. 9.2), 2004: 40-41 (Fig. 10); de la Fuente 1972: 14, 23, 1973 (Illustration 126), 1977 (Plates 1-4, Illustration 3), 1992 (Plates 7, 17-18); Diehl 2004 (Plate VI); Gillespie 1999: 230 (Fig. 13-2); González Calderón 1977: 66 (Foto 87); Ladrón de Guevara 2006: 24; Medellín Zenil 1971 (Lámina 16), 1975: 72; Melgarejo Vivanco 1975: 267; Morante López 2004: 27; Piña Chan 1964: 22, 1989: (Plate 51); Pugh 1981: 11 (Fig. 4); Reilly 1989: 6 (Fig. 3); Rivera Grijalba 1991: 75 (Unnumbered Plate), 80 (Fig. 19); Stirling 1955 (Plates 5 and 6), 1965: 734 (Fig. 24b); Soustelle 1995 (Plate 43)
DRAWINGS: Baudez 2012:12, Fig. 3a; Bonifaz Nuño 1996 (Fig. 73); Clewlow, Cowan, O'Connell, and Benemann 1967: 126 (Fig. 13), 128 (Fig. 14), 130 (Figs. 15a and 15b); Coe and Diehl 1980: 300-301 (Fig. 423); Cyphers 2004: 40; de la Fuente 1973: 174, 1977 (Fig. 5); Lowe 1998: 68 (Fig. 17); Rivera Grijalba 1991: 82 (Fig. 25)
DESCRIPTION: This is the most famous colossal head from San Lorenzo (Stirling 1955). San Lorenzo Monument 1 depicts the head of a large

man with a broad nose, large jowls, and prominent lips. The irises of the eyes point slightly inward. The ears are pierced with tubular ear ornaments. The headdress is decorated with one large band with a knot at the back, possible chinstraps, and an insignia flaring towards the crown of the head. The insignia has scalloped edges near the headband and a circular element on top. Interestingly, the base of this colossal head is irregular. The front facet and left side of the head are marked by four dimpled pits and four grooves.

SAN LORENZO MONUMENT 2 (Figure A.34)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: lying face up under a trail from Tenochtitlán (Stirling 1955: 10)
CURRENT LOC: National Museum of Anthropology (Mexico City)
OTHER ID: San Lorenzo Colossal Head 2
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 269 cm x 183 cm x 105 cm x 544 cm (circumference)
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (front facet, right profile, and left profile of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: found fully buried above Early Formative sherds (San Lorenzo phase); the monument also shows signs of re-carving in the form of the remains of a niche and niche figure on its right side (Cyphers 2004: 45-46; Porter 1989: 26)
PHOTOS: Clewlow, Cowan, O'Connell, and Benemann 1967: 133 (Plate 19), 135 (Plate 20), 137 (Plate 21); Coe and Diehl 1980: 302 (Fig. 424); Cyphers 2004: 44-46 (Figs. 11-12); de la Fuente 1972: 21, 1973 (Illustration 127), 1977 (Illustration 6), 1992 (Plates 6, 19), 1994: 214 (Fig. 13.10); Ladrón de Guevara 2006: 25; Legrand 1965: 41-43; Museum of Fine Arts 1963: 16, 23-26, 29; Porter 1989: 25 (Fig. 2d), 1990: 95 (Fig. 2d); Stirling 1955 (Plate 7)
DRAWINGS: Baudez 2012:11, Fig. 2c; Clewlow, Cowan, O'Connell, and Benemann 1967: 132 (Fig. 16), 134 (Fig. 17), 136 (Fig. 18); Coe and Diehl 1980: 302-303 (Fig. 425); Cyphers 2004:44; de la Fuente 1973: 176-177, 1977 (Fig. 4); Joralemon 1971: 20 (Fig. 6), 1976: 59 (Fig. 22c); Lowe 1998: 68 (Fig. 17); Magni 2003: 237 (Fig. 54); Pohorilenko 2007: 18 (Fig. 1), 20 (Fig. 4)
DESCRIPTION: This head was discovered during Stirling's 1945 fieldwork for the Smithsonian Institution at San Lorenzo. San Lorenzo Monument 2 appears to be a representation of a thinner figure with smaller jowls, less prominent lips, a pronounced chin, and a short nose. Four teeth are faintly visible between the lips. The irises of the eyes are rendered as concave depressions. The ears are decorated with circular ear ornaments with some mosaic patterning, especially on the figure's left profile. The headdress is decorated with depictions of three avian heads, possibly macaws (Coe and Diehl 1980: 302) or turtles (Cyphers 2004: 43), on a large band. The back of the headdress is shown with a series of interwoven bands. The front facet, right side, and left side of this monument are marked by 81 large pits (70 of which are dimpled) and nine grooves. The posterior facet of the monument is also characterized by seven rectangular niches or slots.

SAN LORENZO MONUMENT 3 (Figure A.35)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: lying at the bottom of a deep ravine about 800 meters (half a mile) southeast of the principal mound of San Lorenzo (Stirling 1955: 11)
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 00335
OTHER ID: San Lorenzo Colossal Head 3
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 178 cm x 163 cm x 95 cm x 402 cm (circumference)
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (front facet, left profile, and posterior facet of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: situated above Early Formative sherds (San Lorenzo A phase); found lying face up partially buried in a spring (Stirling 1955: 11; Coe and Diehl 1980: 304)
PHOTOS: Bernal 1969 (Plate 2); Clewlow, Cowan, O'Connell, and Benemann 1967: 139 (Plate 22), 141 (Plate 23), 143 (Plate 24), 159 (Plate 33a); Coe 1992: 59, 64; Cyphers 1994b: 59 (Fig. 4.21), 1997b: 164 (Fig. 7.1), 2004: 48-49 (Fig. 13); de la Fuente 1972: 14, 1973 (Illustration 128), 1977 (Plate 13, Illustration 5), 1992 (Plate 15), 2004:124 (Fig. 11); Ladrón de Guevara 2006: 27; Medellín Zenil 1971 (Lámina 17), 1975: 73; Morante López 2004: 37; Stirling 1955 (Plate 8), 1965: 734 (Fig. 24a)
DRAWINGS: Baudez 2012:11, Fig. 2a; Clewlow, Cowan, O'Connell, and Benemann 1967: 138 (Fig. 19), 140 (Fig. 20), 142 (Fig. 21); Coe and Diehl 1980: 304-305 (Fig. 426); Cyphers 2004: 48; de la Fuente 1973: 179, 1977 (Fig. 5a); Tate 2011: 116 (Fig. 4.40)

DESCRIPTION: San Lorenzo Monument 3 appears to be a portrait of a man with a rounded head that tapers toward the chin. The cheeks, nose, and lips are prominent. The irises of the eyes are rendered as raised discs and point slightly inward. The ears are covered by a chinstrap. The headdress features two horizontal bands with rope-like elements decorated with diagonal serrated designs. Similar designs are visible on the upper part of the chinstrap. The back of the head is relatively unmarked and flat. The front facet, the left side, and posterior facet of this monument are marked by 28 large pits, all of which are dimpled, and a single groove.

SAN LORENZO MONUMENT 4 (Figure A.36)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: approximately 555 meters (600 yards) northwest of the principal mound (Stirling 1955:4)
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 00336
OTHER ID: San Lorenzo Colossal Head 4
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 178 cm x 117 cm x 95 cm x 308 cm (circumference)
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (posterior facet of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: found almost fully buried (Stirling 1955: 4; Coe and Diehl 1980: 306)
PHOTOS: Acosta Lagunes 1992: 24; Benson 2008: 267 (Fig. 2); Benson and de la Fuente (eds.) 1996: 156-157; Berrin and Fields (eds.) 2010 (Plate 25); Beverido Pereau 1996: 607-608 (Fig. 29-30); Clark 1994: 214 (Fig. 2a); Clewlow, Cowan, O'Connell, and Benemann 1967: 145 (Plate 25), 147 (Plate 26), 149 (Plate 27), 159 (Plate 33a); Coe 1992: 59; Cyphers 1997c: 231 (Fig. 9.3), 2004: 50-51 (Fig. 14), 2007: 38; de la Fuente 1972: 22, 1973 (Illustration 129), 1977 (Plate 6, Illustration 4), 1981: 88 (Fig. 1), 89 (Fig. 3), 1992 (Plate 16), 2001: 27 (Figs. 2-3), 2004: 120; Diehl 2004: 111 (Fig. 71); Ladrón de Guevara 2006: 26; Medellín Zenil 1971 (Lámina 18); Melgarejo Vivanco 1975: 14; Morante López 2004: 39; Piña Chan 1989 (Plates 42, 47); Pugh 1981: 10 (Fig. 3); Soustelle 1995 (Plate 53); Stirling 1955 (Plates 9, 10, 11a), 1965: 718 (Fig. 2); Symonds 2000: 64 (Fig. 9)
DRAWINGS: Baudez 2012:11, Fig. 2b; Beverido Pereau 1996: 606 (Fig. 28); Clewlow, Cowan, O'Connell, and Benemann 1967: 144 (Fig. 22), 146 (Fig. 23), 148 (Fig. 24); Coe and Diehl 1980: 306-307 (Fig. 427); Cyphers 2004: 51; de la Fuente 1973: 181-182, 1977 (Fig. 3), 1981 (Fig. 3), 1995: 20 (Fig. 3); Joralemon 1971: 20 (Fig. 7); Lowe 1998: 68 (Fig. 17); Pohorilenko 2007: 19-20 (Figs. 2-3)
DESCRIPTION: This head was excavated during Stirling's 1946 fieldwork for the Smithsonian Institution at San Lorenzo. San Lorenzo Monument 4 appears to be a portrait of the angular head of a figure with a broad nose, prominent lips, and powerful jaw. The irises of the eyes are rendered as incised discs and also point inward. The right ear is shown behind a chinstrap decorated with two vertical rope-like designs. The right ear is decorated with a circular ear ornament with a flaring element. The left ear is obscured by a strap with three knots. The headdress is decorated with a large band composed of four horizontal rope-like bands. A tassel-like element is also shown on the front of the headdress and partially obscures the headband. The back of the head is flat and shows no sign of sculpting but is marked by 27 large dimpled pits and seven grooves.

SAN LORENZO MONUMENT 5 (Figure A.37)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: lying down in a ravine south of the principal mound and close to Laguna 8 (Stirling 1955: 12)
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 04026
OTHER ID: San Lorenzo Colossal Head 5
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 186 cm x 147 cm x 115 cm x 460 cm (circumference)
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits only (front facet of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: toppled into a ravine (Stirling 1955: 12)
PHOTOS: Agogino 1994: 4; Bernal 1969 (Plate 3); Berrin and Fields (eds.) 2010 (Plates 26-28); Clark 1994: 14; Clewlow, Cowan, O'Connell, and Benemann 1967: 151 (Plate 28), 153 (Plate 29), 155 (Plate 30), 157 (Plate 31); Coe 1992: 45; Cyphers 1994b: 59 (Fig. 4.20), 1995b: 14 (Fig. 10), 1996: 51, 1997c: 233 (Fig. 9.4), 2005: 54-55 (Fig. 15); de la Fuente 1972: 22, 1973 (Illustration 130), 1977 (Plates 7-8, Illustration 1), 1981: 94 (Fig. 13), 1992 (Plates 13-14), 2004: 125 (Fig. 12); Di Castro and Cyphers 2006: 46 (Fig. 6a); Ladrón de Guevara 2006: 26, 2010: 26 (Fig. 7); Lowe 1988 (Cover Illustration); Medellín Zenil 1963: 11, 1971 (Lámina 19); Morante López 2004: 23; Rivera

Grijalba 1991: 80 (Fig. 20); Stirling 1955 (Plates 12-13), 1965: 718 (Fig. 3), 731 (Fig. 20b)
DRAWINGS: Bonifaz Nuño 1993: 72 (Fig. 17); Clewlow, Cowan, O'Connell, and Benemann 1967: 150 (Fig. 25), 152 (Fig. 26), 154 (Fig. 27), 156 (Fig. 28); Coe and Diehl 1980: 308-309 (Fig. 428); Cyphers 1997c: 233 (Fig. 9.4), 2004: 54; de la Fuente 1973: 184, 1977 (Fig. 5b); Lowe 1998: 68 (Fig. 17)
DESCRIPTION: San Lorenzo Monument 5 renders the head of a large corpulent figure with large jowls, prominent lips, and a broad, flattened nose. The irises of the eyes are rendered as incised discs pointing slightly inward. The ears are decorated with circular ear ornaments with flaring elements similar to the right ear of San Lorenzo Monument 4. The headdress is decorated with two flattened feline paws and a large smooth headband. The top of the headdress is depicted as a series of interwoven bands and circular elements. The front facet of this monument is marked by eight large pits, all of which are dimpled, and one groove on the right profile.

SAN LORENZO MONUMENT 17 (Figure A.38)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: near the edge of a ravine north of Mound C5-7 on the South-Central Ridge (Coe and Diehl 1980: 324)
CURRENT LOC: National Museum of Anthropology (Mexico City)
OTHER ID: San Lorenzo Colossal Head 6
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 167 cm x 141 cm x 126 cm
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (front facet, right profile, and posterior facet of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: partially buried and toppled on its side; San Lorenzo phase pottery was found around the monument and a cache of multi-drilled iron-ore beads was found near its base (Coe and Diehl 1980: 324)
PHOTOS: Aveleyra Arroyo de Anda 1965: 12-13 (Foto 18-19); Castro-Leal 2004 (Color Plate); Clewlow, Cowan, O'Connell, and Benemann 1967: 158 (Plate 6), 163 (Plate 36); Coe 1967: 9 (Fig. 7), 1968b: 56 (Fig. 11), 1981: 142 (Fig. 5.18); Coe and Diehl 1980 (Color Plate); Cyphers 1994b: 58 (Fig.4.18), 2004: 77 (Fig. 35); de la Fuente 1972: 13, 1973 (Illustration 142), 1977 (Plate 14, Illustration 2), 1992 (Plate 12); Piña Chan 1989 (Plate 50)
DRAWINGS: Clewlow, Cowan, O'Connell, and Benemann 1967: 162 (Fig. 29); Coe and Diehl 1980: 324-325 (Fig. 443); Cyphers 2004: 76; de la Fuente 1973: 202-203, 1977 (Fig. 4a); Lowe 1998: 68 (Fig. 17)
DESCRIPTION: First discovered by Roman Piña Chan and Luis Aveleyra Arroyo de Anda in 1965, San Lorenzo Monument 17 was described in 1966 by the joint Yale University/Instituto Nacional de Antropología e Historia excavations at San Lorenzo. It depicts the head of a large corpulent figure with large jowls, prominent lips, and a broad, flattened nose. The irises of the eyes are rendered as raised discs pointing slightly inward. The ears are decorated with flaring ear ornaments. The headdress is decorated with a large headband bearing the remains of crossed bands. The top of the headdress is depicted as a series of concentric circles connected by rope-like elements, each made of three individual bands. The back of the head is flat. The front facet, posterior facet, and right side of this monument are marked by five dimpled pits, some of which are dimpled, and two grooves.

SAN LORENZO MONUMENT 53 (Figure A.39)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: buried in Pit 2, east of Plane Table Station LI, east of Laguna I (Coe and Diehl 1980: 363)
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 00053
OTHER ID: San Lorenzo Colossal Head 7
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 270 cm x 185 cm x 135 cm
MEDIUM: basalt (Coe and Diehl 1980: 363) or andesite (Brüggemann and Hers 1970)
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (front facet of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: found lying face up at a depth of 1.2 meters and associated with San Lorenzo phase A material (Coe and Diehl 1980: 364); the remnants of a niche and niche figure from a re-carved throne are visible on the head's right side (Cyphers 2004: 115-117; Porter 1989)
PHOTOS: Beverido 1970 (Foto 89); Coe 1992: 66; Cyphers 1994b: 60-61 (Figs. 4.23-4.24), 199b5: 24 (Fig. 25), 1997b (Fig. 7.10), 2004: 116-117 (Fig. 64); de la Fuente 1973 (Illustration 178), 1977 (Illustration 8), 1987 (Plates 1-3), 1991: 70-71, 73 (Figs. 1-3, 8), 1992 (Plates 9, 30-32); Di Castro and Cyphers 2006: 46 (Fig. 6b), 2007: 42; Ladrón de Guevara 2006: 26, 2008: 138 (Fig. 1), 2010: 64 (Fig. 1); Porter 1989: 22 (Fig. 1), 1990: 93 (Fig. 1); Rivera Grijalba 1991: 80 (Fig. 21); Sims 2005: 37

DRAWINGS: Cyphers 2004: 116; de la Fuente 1972: 23, 1973: 232, 1977 (Fig. 3a), 1992: 99 (Fig. 1), 138 (Fig. 3)
DESCRIPTION: This monument was originally discovered by Francisco Beverido in 1969 during the Instituto Nacional de Antropología e Historia excavations at San Lorenzo. San Lorenzo Monument 53 portrays the head of a figure with a relatively concave face, prominent lips, and a broad nose. Four teeth are visible in the figure's mouth and the irises of the eyes are rendered as raised discs pointing slightly inward. The right ear is decorated with an outward-flaring ear ornament. The vestiges of a circular ornament are visible on the left side of the head. The headdress is decorated with a large headband made of one large and two smaller peripheral bands. The front of the headdress also bears two hand motifs with concentric circles in their palms. The back of the head shows a knot with 15 feathers below the main headband. Finally, this colossal head is also marked by 23 dimpled pits and 15 grooves on its face.

SAN LORENZO MONUMENT 61 (Figure A.40)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: southeast of Laguna 8 (Coe and Diehl 1980: 364)
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 00061
OTHER ID: San Lorenzo Colossal Head 8
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 220 cm x 165 cm x 160 cm
MEDIUM: basalt – Cerro Cintepec Type B (Coe and Diehl 1980: 364) or andesite (Brüggeman and Hers 1970)
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (front facet and left profile of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: found lying on its left side at a depth of 4 meters and was apparently placed in a pit which was dug 2 meters into the natural sedimentary formation (Coe and Diehl 1980: 364)
PHOTOS: Acosta Lagunes 1992: 18, 25; Benson and de la Fuente (eds.) 1996: 154-155; Bonifaz Nuño 1993: 72 (Fig. 18); Brüggemann and Hers 1970: 20-21 (Figs. 23-26); Breiner and Coe 1972 (Fig. 6); Coe 1992: 37; Cyphers 1994b: 55 (Fig. 4.17), 60 (Fig. 4.22), 2004: 126-129 (Fig. 73-75); de la Fuente 1973 (Illustration 186), 1977 (Illustration 7), 1981 (Plates 4-5, Fig. 4), 1992 (Plates 10, 33-34), 1994: 214 (Fig. 13.11), 2004: 115, 124 (Fig. 10); Diehl 2004 (Cover Illustration, Plate VII); Diehl and Coe 1995: 14 (Fig. 4); Ladrón de Guevara 2006: 26; Morante López 2004: 19
DRAWINGS: Bonifaz Nuño 1993: 72 (Fig. 16); Cyphers 1997b: 172 (Fig. 7.4), 1997c (Fig. 9.4), 2004: 126; Cyphers, Hernández-Portilla, Varela-Gómez, and Grégor-López 2006: 21 (Fig. 1.2b); de la Fuente 1972: 22, 1973: 239, 1991: 71-73 (Figs. 4-5, 9), 1992: 101 (Fig. 2), 141 (Fig. 4), 1995: 25 (Fig. 14) Tate 2011: 203 (Fig. 7.1d)
DESCRIPTION: San Lorenzo Monument 61 was initially described Brüggemann and Hers (1970) as part of the 1979 excavations undertaken by the Instituto Nacional de Antropología e Historia at San Lorenzo. It depicts the head of a man with a relatively corpulent face, prominent lips, and a broad nose. Six teeth are visible in the figure's open mouth and the irises of the eyes are rendered as incised discs pointing slightly inward. The ears are located behind a chinstrap and feature backward-flaring ear ornaments. The headdress contains a large headband with four feather-like elements. The crown of the headdress also has a backward-facing series of lines, possibly indicating feathers or hair. Interestingly, this colossal head has a very irregular base and could not have stood erect without somesort of platform. The back of the head is relatively unmodified but shows the vestiges of the headband. A mixture of five pits (four of which are dimpled) and four grooves can be seen on the front facet and left profile of this colossal head.

SAN LORENZO MONUMENT 66 (Figure A.41)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: ------
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 00066
OTHER ID: San Lorenzo Colossal Head 9
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 165 cm x 136 cm x 117 cm
MEDIUM: basalt
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits and grooves (front facet, right profile, left profile and posterior facet of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: toppled and found lying face up; the back of the colossal head is flat suggesting that it was recycled from a throne (Porter 1989)
PHOTOS: Coe 1992: 65; Cyphers 2004: 134-135 (Fig. 79); de la Fuente 1981 (Plates 6-7), 1992 (Plates 35-36); Ladrón de Guevara 2006:27; Rivera Grijalba 1991: 80 (Figs. 22-24); Ruiz Gordillo 1982: 12
DRAWINGS: Cyphers 1997c: 228 (Fig. 9.1), 2004:134; de la Fuente 1991: 72-73 (Figs. 6-7, 10), 1992:143 (Fig. 5); Rivera Grijalba 1991: 82 (Fig. 27); Ruiz Gordillo 1982: 11

DESCRIPTION: This colossal head sculpture was described by Ruiz Gordillo (1982). San Lorenzo Monument 66 displays the face of a man with large jowls, slightly thin lips that protrude outwards as if covering large prominent teeth, a broad nose, and a large chin. The irises of the eyes are rendered as incised discs pointing slightly inward. The ears are located behind a chinstrap and feature tubular ear ornaments. The headdress contains a flaring headband decorated two sets of rope-like motifs and a central panel with marked by an undulating line. The back of the head is relatively unmodified and flat. Three grooves and 19 pits (15 of which are dimpled) are visible on the front, right and left sides, and back of this monument.

SAN LORENZO MONUMENT 89 (Figure A.42)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: bottom of the Ojochi ravine (Cyphers 1994a: 68, 2004: 154-156)
CURRENT LOC: San Lorenzo Site Museum (Tenochtitlán, Texistepec, Veracruz)
OTHER ID: San Lorenzo Colossal Head 10
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 180 cm x 143 cm x 92 cm x 441 cm (circumference)
MEDIUM: basalt
MONUMENT TYPE: colossal head
PIT AND GROOVE WORK: pits only (front facet of the monument)
TECHNIQUE: low relief carving of the features of the face and headdress
TAPHONOMY: toppled and found lying on its left side buried at the bottom of a ravine (Cyphers 1994a: 68, 2004: 154-156)
PHOTOS: Cyphers 1994a: 67-71, 1994b: 55 (Fig. 4.14), 1995b (Cover Illustration; Plates 11-14), 2010: 34 (Fig.11); de la Fuente 2004: 122 (Fig. 8); Di Castro and Cyphers 2006: 46 (Fig. 6d); Magni 1999: 39 (Plate V)
DRAWINGS: Cyphers 2004: 155
DESCRIPTION: San Lorenzo Monument 89 renders the face of a man with large jowls and lips, prominent cheeks, a broad nose, and a large chin. The irises of the eyes are rendered as raised discs pointing slightly inward. The ears are located behind a chinstrap and feature large circular ear ornaments. The headdress consists of multiple rounded squares with circular puncture marks in the middle of each square. The crown and front part of the headdress is decorated with a large feline paw. The base is slightly irregular; while the back of the head is flattened and the headdress appears to be more weathered towards the bottom. There is only one dimpled pit visible on the face of this colossal head.

SAN LORENZO MONUMENT 6 (Figure A.43)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: approximately 1600 meters (one mile) from the principal mound (Mound C3-1) on flat land below a ridge (Stirling 1955: 13); now recognized as the site of Loma del Zapote (Cyphers 2004)
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz)
OTHER ID: Loma del Zapote Monument 12 (Cyphers 2004: 258)
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 87cm x 66 cm x 60 cm
MEDIUM: basalt
MONUMENT TYPE: full-round sculpture
PIT AND GROOVE WORK: grooves only (left profile of the monument)
TECHNIQUE: high relief carving with details in low relief
TAPHONOMY: presumably found on the surface – no other details about its discovery are known (Coe and Diehl 1980: 310)
PHOTOS: Berrin and Fields (eds.) 2010: 127 (Plate 29); Cyphers 1997b: 165 (Fig. 7.2), 2004: 258-260 (Figs.173-174); de la Fuente 1973 (Illustration 131), 1977 (Plates 10 and 10a); Di Castro and Cyphers 2006: 46 (Fig. 6e); Piña Chan 1989 (Plate 44); Stirling 1955 (Plate 14)
DRAWINGS: Baudez 2012:22, Fig. 8d; Coe and Diehl 1980: 310 (Fig. 429); de la Fuente 1973: 186; Lowe 1998: 38 (Fig. 8); Magni 2003: 234 (Fig. 52)
DESCRIPTION: This monument consists of a decapitated head that was removed from a full-round sculpture of a human figure. The head features slit-like eyes, a large flattened nose, and somewhat large jowls. The ears are decorated with circular ear ornaments. The headdress is rounded and has a prominent headband decorated with paw-wing designs. A single groove is visible on the lower left side of the head, behind the ear.

SAN LORENZO MONUMENT 14 (Figure A.44)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: southwest of the principal mound, in a laguna on the Group E Ridge (Cyphers 1999: 160; Stirling 1955: 15)
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 10966
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 183 cm x 348 cm x 152 cm
MEDIUM: basalt
MONUMENT TYPE: throne

PIT AND GROOVE WORK: pits and grooves (front and superior facets of the monument)
TECHNIQUE: high relief carving of the niche figure, panel figures in low relief
TAPHONOMY: found in a laguna, fully submerged underwater for most the year (Stirling 1955: 15); in addition to the pit and groove work, this monument is also marked by 16 square or rectangular slots on its right side and upper surface
PHOTOS: Beverido Pereau 1996: 637 (Fig. 59); Bonifaz Nuño 1993: 71 (Fig. 15); Cyphers 1994b: 65 (Fig. 4.27), 1995b: 14 (Fig. 6), 1997b: 171 (Fig. 7.3, 2004: 70-74 (Figs. 29-33), 2007: 39; de la Fuente 1973 (Illustration 139), 1977 (Illustration 24), 1994: 213 (Fig. 15.9); Di Castro and Cyphers 2006: 46 (Fig. 6c), 2007: 89; Grove 1981: 50 (Fig.2); Melgarejo Vivanco 1975: 251; Milbrath 1979: 59 (Figs. 34-36); Piña Chan 1989: 112 (Fig. 42); Pool 2007: 108 (Fig. 4.4); Sims 2005: 36; Stirling 1955 (Plates 21b and 22), 1965: 733 (Fig. 21b)
DRAWINGS: Baudez 2012:11, Fig. 2d; Clark, Guernsey, and Arroyo 2010: 13 (Fig. 1.8); Coe and Diehl 1980: 321 (Figs.438-439); Cyphers 2004: 70, 72; Cyphers, Hernández-Portilla, Varela-Gómez, and Grégor-López 2006: 21 (Fig. 1.2a), 23 (Fig. 1.3); Cyphers and Zurita-Noguera 2006: 42 (Fig.2.3); de la Fuente 1973: 199; Diehl 2004: 39 (Fig. 18); Gillespie 2000: 106 (Fig. 8); Joralemon 1976: 58 (Fig. 21a); Ladrón de Guevara 2006: 12; Magni 2003: 237 (Fig. 54); Medellín Zenil 1971 (Láminas 12-14); Pohorilenko 2007: 21 (Figs. 5-6); Tate 2011: 115 (Fig. 4.39), 203 (Fig.7.1b)
DESCRIPTION: San Lorenzo Monument 14 is a throne sculpture depicting an adult human figure emerging from a hollow niche. This niche figure is depicted sitting in a cross-legged manner and, like the niche figure in La Venta Altar 4, holding the remnants of a rope in its right hand. Although the figure's face is almost completely eroded, the vestiges of a headdress, armbands, a collar, a belt, and a pectoral are still visible. The left panel of the throne contains the remnants of a human head with a zoomorphic headdress. The right panel contains a much more complete profiled rendering of a sitting human figure wearing a belt, loin cloth, scalloped pectoral, arm band, a headdress decorated with a feline paw. The front and superior facets of the throne are also marked by two large pits and seven grooves.

SAN LORENZO MONUMENT 19 (Figure A.45)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: on the upper east slope of the South-Central Ridge and above a ravine separating it from the Southeast Ridge (Coe and Diehl 1980: 329)
CURRENT LOC: in situ - San Lorenzo archaeological site (Texistepec, Veracruz) but not confirmed (Cyphers 2004: 80-81)
OTHER ID: Monumento Rosas (Coe and Diehl 1980: 329)
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 113 cm x 100 cm (diameter)
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: undressed boulder
PIT AND GROOVE WORK: pits and grooves (front facet of the monument)
TECHNIQUE: -----
TAPHONOMY: almost fully buried on the east slope of the South-Central Ridge (Coe and Diehl 1980: 329); dragged into position during the San Lorenzo phase in red and yellow clay associated with stela fragments (Coe and Diehl 1980: 93-94)
PHOTOS: Coe 1966: 22 (Fig. 25); Coe and Diehl 1980: 329 (Fig. 448)
DRAWINGS: Coe and Diehl 1980: 91 (Fig. 56)
DESCRIPTION: This is a large oblong boulder that was found in 1966 during the joint Yale University / Instituto Nacional de Antropología e Historia excavations at San Lorenzo. Coe and Diehl suggest that it may have originally been a small colossal head (1980: 329). The front facet of this monument is covered with 19 shallow pits and three grooves.

SAN LORENZO MONUMENT 20 (Figure A.46)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: east of Mound C2-10 on the edge of a ravine (Coe and Diehl 1980: 330)
CURRENT LOC: San Lorenzo Site Museum (Tenochtitlán, Texistepec, Veracruz)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 167 cm x 225 cm x 150 cm
MEDIUM: basalt – Cerro Cintepec Type B
MONUMENT TYPE: throne
PIT AND GROOVE WORK: pits and grooves (superior facet, posterior facet, and right profile of the monument)
TECHNIQUE: high relief carving of the niche figure
TAPHONOMY: found partially buried and toppled with the front facet containing the niche figure facing upward (Coe and Diehl 1980: 330)
PHOTOS: Coe 1966: 23 (Fig. 26), 1968b: 48 (Fig. 3), 1981: 142 (Fig. 5.19); Coe and Diehl 1980: 330 (Figs. 449-450); Cyphers 1997b: 178 (Fig. 7.11), 2004: 82-83 (Fig. 39); de la Fuente 1977 (Illustration 22); Grove 1981: 48 (Fig.1)
DRAWINGS: Coe and Diehl 1980: 331 (Fig. 451); Cyphers 2004: 84 (Fig. 40); de la Fuente 1973: 207, 1977 (Plate 23); Diehl 2004: 119 (Fig.

78); Joralemon 1971: 73 (Fig. 210c); Magni 2003: 237 (Fig. 54); Pohorilenko 2007: 23 (Fig. 9)
DESCRIPTION: San Lorenzo Monument 20 is a throne sculpture discovered by Richard Diehl during the 1966 joint Yale University / Instituto Nacional de Antropología e Historia excavations at San Lorenzo. It depicts an adult human figure emerging from a hollow niche. This niche figure is depicted sitting in a cross-legged manner and, like the niche figure in La Venta Altar 2, holding an infant figure. Although the niche figure's face and body are almost completely eroded, the vestiges of a headdress and circular ear ornaments are still visible. The back of the monument has a rectangular niche formed by two horizontal slots marked by four shallow pits. Six other pits and ten grooves are visible on its superior facet and right side.

SAN LORENZO MONUMENT 21
(Figure A.47a)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: lying face down at the junction of two arroyos, near the southernmost part of the Southeast Ridge (Coe and Diehl 1980: 332)
CURRENT LOC: National Museum of Anthropology (Mexico City)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 130 cm x 60 cm x 34-50 cm
MEDIUM: basalt
MONUMENT TYPE: carved basin
PIT AND GROOVE WORK: pits and grooves (superior facet of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: found almost fully buried with only one corner visible from the surface (Coe and Diehl 1980: 332) on top of a cache containing celts and pottery (Coe and Diehl 1980: 100-103)
PHOTOS: Coe 1966: 23-24 (Fig. 27-28), 1968b: 49 (Fig. 4); Coe and Diehl 1980: 100 (Fig. 61), 102 (Fig. 64), 332 (Fig. 453); Cyphers 2004: 85-86 (Figs. 41-42); de la Fuente 1972: 34, 1977 (Illustration 23), 2001: 31 (Fig. 9)
DRAWINGS: Coe and Diehl 1980: 100 (Fig. 62), 102 (Fig. 65), 332 (Fig. 452); de la Fuente 1973: 208, 1995: 22 (Fig. 6); Pohorilenko 2007: 26 (Fig. 12)
DESCRIPTION: Discovered by Richard Diehl during the 1966 joint Yale University / Instituto Nacional de Antropología e Historia excavations at San Lorenzo. San Lorenzo Monument 21 consists of a rectangular stone basin with hollowed out back and a front side that contains a low relief carving of canine with a lolling tongue and large testicles. Coe and Diehl suggest that it is either a dog or coyote (1980: 332). The carved surface of the monument is covered by 19 shallow pits and seven grooves. Coe and Diehl (1980: 332) also suggest that this monument may have pre-dated Olmec-style art and that it served as an heirloom during the Early Formative period.

SAN LORENZO MONUMENT 23
(Figure A.47b)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: located on the south slope of the Group D Ridge, near a monument worshop (Coe and Diehl 1980: 334)
CURRENT LOC: in situ - San Lorenzo archaeological site (Texistepec, Veracruz)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 168 cm x76 cm x 15-25 cm
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: plain stela
PIT AND GROOVE WORK: pits only (front facet of the monument)
TECHNIQUE: pecking and some abrasion (hammer-smoothed?)
TAPHONOMY: set upright in a pit at the end of the San Lorenzo B phase as part of a line of monuments buried at the same time (Coe and Diehl 1980: 334)
PHOTOS: Coe and Diehl 1980: 334 (Fig. 455); Cyphers 2004: 87 (Fig. 43)
DRAWINGS: ------
DESCRIPTION: Originally discovered by Matthew Stirling in 1946, San Lorenzo Monument 23 was documented more fully by Richard Diehl during the 1966 joint Yale University / Instituto Nacional de Antropología e Historia excavations at San Lorenzo (Coe and Diehl 1980: 334). This monument consists of a rough, rectangular plain stela, possibly broken at the top. Two shallow pits are located on the front facet of the stela.

SAN LORENZO MONUMENT 50 (Figure A.48)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: found during the excavation of a magnetic anomalyon the east end of the cut at Station 0+73.7 on the main drain line, about two meters from the line itself (Coe and Diehl 1980: 358)
CURRENT LOC: in situ - San Lorenzo archaeological site (Texistepec, Veracruz)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 98 cm x 133 cm x 60 cm
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: undressed boulder

PIT AND GROOVE WORK: pits and grooves (interior and exterior facets of this monument)
TECHNIQUE: ------
TAPHONOMY: may have originally been part of a colossal head, it was subsequently fragmented (Coe and Diehl 1980: 358)
PHOTOS: Coe and Diehl 1980: 359 (Fig. 491)
DRAWINGS: ------
DESCRIPTION: Excavated during the 1968 joint Yale University/Instituto Nacional de Antropología e Historia excavations at San Lorenzo (Coe and Diehl 1980: 358), San Lorenzo Monument 50 is a large irregular stone with a rounded exterior facet and a concave interior facet. Two pits and four grooves are visible on both sides of the monument.

SAN LORENZO MONUMENT 51 (Figure A.49)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: northeast of Laguna 19 (Coe and Diehl 1980: 361)
CURRENT LOC: in situ - San Lorenzo archaeological site (Texistepec, Veracruz)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 210 cm x 181 cm x 80 cm
MEDIUM: basalt – Cerro Cintepec Type A
MONUMENT TYPE: rectangular slab
PIT AND GROOVE WORK: pits and grooves (superior facet of the monument)
TECHNIQUE: abrasion (hammer-smoothed?)
TAPHONOMY: partially buried during the San Lorenzo A phase and completely covered by the Palangana phase (Coe and Diehl 1980: 361)
PHOTOS: Coe and Diehl 1980: 360 (Fig. 492); Cyphers 2004: 111 (Fig. 61)
DRAWINGS: ------
DESCRIPTION: San Lorenzo Monument 51 consists of a large rectangular slab whose surface was polished smooth with the exception of the four pits and 33 grooves that are visible on this monument's superior surface.

SAN LORENZO MONUMENT 63 (Figure A.50)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: the South-Central Ridge (Coe and Diehl 1980: Map 2)
CURRENT LOC: in situ - San Lorenzo archaeological site (Texistepec, Veracruz)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 82 cm x 180 cm x 218 cm
MEDIUM: basalt (Coe and Diehl 1980: 365) or andesite (Brüggemann and Hers 1970: 29)
MONUMENT TYPE: undressed boulder
PIT AND GROOVE WORK: grooves only (superior facet of the monument)
TECHNIQUE: pecking and some abrasion (lightly polished?)
TAPHONOMY: deliberately placed in a pit that was later filled with 13 cobbles (Coe and Diehl 1980: 365)
PHOTOS: Brüggemann and Hers 1970: 22 (Fig. 27); Cyphers 2004: 130 (Fig.76)
DRAWINGS: Cyphers 2004: 130
DESCRIPTION: San Lorenzo Monument 63 was first described Brüggemann and Hers (1970). This monument consists of an irregular block marked by 35 grooves on its upper surface.

SAN LORENZO MONUMENT 64 (Figure A.51)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: the base of Mound C4-31 (Coe and Diehl 1980: 365), north of Monument 16 (de la Fuente 1973: 241)
CURRENT LOC: in situ - San Lorenzo archaeological site (Texistepec, Veracruz)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 22 cm x 260 cm (diameter)
MEDIUM: basalt – Cerro Cintepec Type A (Coe and Fernandez1980: 401) or andesite (Brüggemann and Hers 1970: 20)
MONUMENT TYPE: carved round stone (circular altar?)
PIT AND GROOVE WORK: pits and grooves (superior facet of the monument)
TECHNIQUE: pecking and abrasion (hammer-smoothed); low relief carving
TAPHONOMY: partially buried in a Villa Alta stratum (Brüggeman and Hers 1970: 20; Coe and Diehl 1980: 365)
PHOTOS: Brüggemann and Hers 1970: 22 (Fig. 28); Cyphers 2004: 131 (Fig. 77)
DRAWINGS: Cyphers 2004: 132 (Fig. 78); Pohorilenko 2007: 23 (Fig. 8)
DESCRIPTION: San Lorenzo Monument 64 was first described Brüggemann and Hers (1970). It consists of a relatively thin carved round stone. It may have functioned as an altar. Much of the upper surface is fractured but a low relief carving of a cylindrical object with a serrated bottom edge – reminiscent of the cloud motifs of the Chalcatzingo Monument 1. It may also represent a feather (Cyphers 2004: 132) or maize bundle (Grove and Paradis 1971; Taube 1995). There are 14 pits and 26 grooves on the superior facet of this monument.

SAN LORENZO MONUMENT 112 (Figure A.52)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: ------
CURRENT LOC: San Lorenzo Site Musem (Tenochtitlán, Texistepec, Veracruz)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 210 cm x 140 cm x 80 cm
MEDIUM: basalt
MONUMENT TYPE: oval stone with low-relief carving
PIT AND GROOVE WORK: pits and grooves (posterior facet of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: toppled and fully buried, the monument was found lying face down (Cyphers 2004: 190-191)
PHOTOS: Cyphers 2004: 190-191 (Figs. 126-127)
DRAWINGS: Cyphers 2004: 190
DESCRIPTION: San Lorenzo Monument 112 is an irregular oval stone that bears a low relief carving on its upper surface. The carving depicts a human figure with his arms raised and wearing a loincloth and belt. A curved object, possibly a knife or horn, is shown on the belt. The figure's face is rendered in profile with a large nose and protruding lips. The figure's hair is worn in a knot and an elongated ear ornament is shown hanging from the ear. Six shallow pits and approximately 102 grooves of various sizes are visible on the base of this monument (Cyphers 2004: 191, Fig. 127).

SAN LORENZO MONUMENT 114
(Figure A.53)

REGION: southern Gulf Coast lowlands
GEN PROV: San Lorenzo Tenochtitlán, Veracruz
SPE PROV: ------
CURRENT LOC: bodega of the Museum of Anthropology (Xalapa, Veracruz)
OTHER ID: ------
CHRONOLOGY: Early Formative period (1200-900 BC)
DIMENSIONS: 217 cm x 35 cm x 45 cm
MEDIUM: basalt
MONUMENT TYPE: column
PIT AND GROOVE WORK: pits only (front and posterior facets of the monument)
TECHNIQUE: pecking and abrasion (hammer-smoothed and polished)
TAPHONOMY: ------
PHOTOS: Cyphers 2004: 193 (Fig. 129)
DRAWINGS: ------
DESCRIPTION: San Lorenzo Monument 114 was first described briefly by Winfield Capitaine (1991: 75) as a rectangular column. This monument also has two pits visible on its front and posterior facets.

EL VIEJÓN MONUMENT 1 (Figure A.54)

REGION: southern Gulf Coast lowlands
GEN PROV: El Viejón, Veracruz
SPE PROV: ------
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 10934
OTHER ID: Relief from Actopan, Veracruz (Wicke 1971:19); El Viejón Stela 1 (Bernal 1969)
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 375 cm x 175 cm
MEDIUM: gray andesite
MONUMENT TYPE: stela
PIT AND GROOVE WORK: pits only (front and posterior facets of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: monument accidentally found in the patio of a home but was found above Middle Formative period ceramics (Medellín Zenil 1960: 82; de la Fuente 1973: 131-133)
PHOTOS: Bernal 1969 (Plate 70); Coe 1992: 47; de la Fuente 1973 (Illustration 92), 1977 (Plate 5, Illustration 68); Ladrón de Guevara 2006: 23; Melgarejo Vivanco 1975: 248; Milbrath 1979: 69 (Fig. 74); Pérez Suárez 1997: 19 (Fig. 1); Piña Chan 1989 (Plate 52); Wicke 1971: 19 (Fig. 13); Wilkerson 1981: 191 (Fig. 6)
DRAWINGS: de la Fuente 1973: 131; Magni 2003: 235 (Fig. 53); Medellín Zenil 1960 (Plate 9)
DESCRIPTION: El Viejón Monument 1 is broken stela depicts two standing figures. The central figure holds a vegetal staff, possibly a stalk of maize (Medellín Zenil 1960: 80), and wears elaborate clothing, including leg and arm bands, a thick collar, a heavy belt, a loincloth, and foot coverings. The figure's headdress is partially eroded but appears to have included a chinstrap, backward-facing tassels, and a visor. The peripheral figure is highly weathered and fragmentary but appears to hold an object and is shown wearing a loincloth and foot coverings. At least nine pits are visible on the front and posterior sides of this stela.

ANGEL R. CABADA MONUMENT 1
(Figure A.55)

REGION: southern Gulf Coast lowlands
GEN PROV: Ingenio Angel R. Cabada, Veracruz
SPE PROV: ------
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 042
OTHER ID: El Danzante
CHRONOLOGY: Late Formative period (300 BC-AD 200)
DIMENSIONS: 225 cm (height)

MEDIUM: basalt
MONUMENT TYPE: stela
PIT AND GROOVE WORK: pits and grooves (left profile of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: ------
PHOTOS: de la Fuente 1973 (Illustration 206); Dubón (*L'Art Olmeque*) 1972 (Fig. 23); Ladrón de Guevara 2010: 67 (Fig. 9); Ladrón de Guevara 2006: 28; Magni 2003: 223 (Fig. 50)
DRAWINGS: de la Fuente 1973: 268
DESCRIPTION: Angel R. Cabada Monument 1 is a relatively plain stela with a low relief carving of a human figure on its front facet. The human figure is depicted wearing a headdress and is rendered in a position in which one hand is extended over the head. This posture is typical of the so-called "danzante" sub-type of low-relief sculpture identified by Lee Parsons (1981: 263, 1986: 16-17) with the Late Olmec-Post Olmec Transition period (700-500 BC). Other examples include the Alvarado Stela (Parsons 1986, Plate 8), the "danzantes" of Monte Alban (Parsons 1986, Plate 7), and Kaminaljuyú Stela 9 (Parsons 1986, Plate 5). One groove and one pit are visible on the left profile of this stela.

LLANO DE JICARO MONUMENT 8 (Figure A.56)

REGION: southern Gulf Coast lowlands
GEN PROV: Llano de Jicaro, Veracruz (in the hinterland of Laguna de los Cerros)
SPE PROV: ------
CURRENT LOC: Museum of Anthropology (Xalapa, Veracruz), No. 00341
OTHER ID: El Señor del Monte (Morante López 2004: 60); Laguna de los Cerros Monument 8 (Medellín Zenil 1975: 77; Wicke 1971: 49)
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 195 cm x 135 cm x 90 cm
MEDIUM: basalt
MONUMENT TYPE: full-round sculpture
PIT AND GROOVE WORK: grooves only (posterior facet of the monument)
TECHNIQUE: high relief carving
TAPHONOMY: found lying on its back; covered by Classic period ceramics
PHOTOS: Bernal 1969 (Plate 26); Bonifaz Nuño 1993: 71 (Fig. 14); Coe 1992: 67; de la Fuente 1973 (Illustration 103), 1977 (Illustration 56); Medellín Zenil 1960 (Plate 22), 1963: 11, 1971 (Lámina 36), 1975: 77; Melgarejo Vivanco 1975: 254; Morante López 2004: 61
DRAWINGS: de la Fuente 1973: 143, 1977 (Fig. 4); Diehl 2004: 117 (Fig. 76); Gillespie 1996: 30 (Fig. 1), 2000: 104 (Fig. 6); Magni 2003: 53 (Fig. 9); Wicke 1971: 49 (Fig. 27)
DESCRIPTION: Initially described during the 1960 field season of the Anthropology Department at the University of Veracruz (de la Fuente 1973:143), Monument 8 is a full-round sculpture portraying the torso, arms, and head of a human figure on a square base. The figure has closed eyes with heavy square eyelids, and its hands are draped over the base. Large block-like ears also appear on the sides of the head. There is some argument regarding the chronology of the figure with some relating it to the Late Formative or Early Classic period (e.g. Medellín Zenil 1960: 92-93; de la Fuente 1973: 143-144); and others pointing to an earlier Middle Formative period chronology (e.g. Bove 1978: 1; Gillespie 2000: 105). There is also some debate regarding whether this monument is an unfinished sculpture or a piece of abstract art (Clewlow 1974: 52, de la Fuente 1977: 265; Smith 1963: 133). One groove can be seen on the posterior facet of this monument.

TRES ZAPOTES STELA F (Figure A.57)

REGION: southern Gulf Coast lowlands
GEN PROV: Tres Zapotes, Veracruz
SPE PROV: approximately 50 meters east of Group 1, Mound 111 (Pool and Ortíz Ceballos 2008: 432)
CURRENT LOC: Tres Zapotes Museum (Tres Zapotes, Veracruz)
OTHER ID: ------
CHRONOLOGY: Middle Formative period (900-400 BC)
DIMENSIONS: 195 cm x 135 cm x 90 cm
MEDIUM: ------
MONUMENT TYPE: stela (fragment)
PIT AND GROOVE WORK: pits only (front facet of the monument)
TECHNIQUE: high relief carving with details in low relief
TAPHONOMY: found near Group 1, Mound 111; this mound contained three Middle Formative period burials; stela is fragmentary, possible instance of monument mutilation
PHOTOS: Pool 2010: 117 (Fig. 5.22); Pool and Ortíz Ceballos 2008: 433 (Fig. 5)
DRAWINGS: ------
DESCRIPTION: Tres Zapotes Stela F was recently discovered by Christopher Pool and his colleagues in 2003 during the Ithaca College/University of Kentucky investigations at Tres Zapotes (Pool 2010:116). This monument consists of a stela fragment with the partial remains of a central figure carved in high relief. There is a raised border around the figure that is similar to the border on San Lorenzo Monument 8. Although much of the figure is missing, the figure appears to have been rendered in frontal view like the figure in La Venta Stela 1. The remnants of a cape are

also visible. Two pits are visible on the raised border off of the figure's shoulder.

ALVARADO STELA (Figure A.58)

REGION: southern Gulf Coast lowlands
GEN PROV: Alvarado, or Cerro de la Piedra, Veracruz
SPE PROV: near the Papaloapan River
CURRENT LOC: National Museum of Anthropology (Mexico City)
OTHER ID: Obelisco de Alvarado (Batres 1905)
CHRONOLOGY: Late Formative period (300 BC-AD 200); sometimes associated with the Classic period (Cervantes 1976: 322)
DIMENSIONS: 360 cm x 56 cm
MEDIUM: basalt
MONUMENT TYPE: stela
PIT AND GROOVE WORK: pits only (front facet and right profile of the monument)
TECHNIQUE: low relief carving
TAPHONOMY: ------
PHOTOS: Cervantes 1976: 311 (Foto 1); Parsons 1986 (Plate 8)
DRAWINGS: Bernal 1969: 63 (Fig. 8); Cervantes 1976: 310 (Figs. 1-2), 312-315 (Figs. 3-6), 318-319 (Figs. 9-10); Clark, Guernsey, and Arroyo 2010: 12 (Fig. 1.7a); Covarrubias 1957: 69 (Fig. 29); Joralemon 1971: 21 (Fig. 11); Magni 2003: 217-219 (Figs. 48-49); Smith 1963: 207 (Fig. 403); Taube 2004: 163 (Fig. 75)
DESCRIPTION: Originally described at the beginning of the Twentieth Century by Leopoldo Batres (1905: 8), the Alvarado Stela is a tall monument made from a natural five-sided basalt column. It contains a low relief carving depicting two human figures – one standing and one kneeling. The standing figure wears ornate clothing including a large belt, possibly associated with the ballgame, circular ear ornaments, a loincloth, and a headdress decorated with zoomorphic designs. A "skyband" is visible above the figure; while there is an abstract depiction of the earth underneath the figure. A scroll motif, possibly a cloud, is visible on the right side of the stela. Like Angel R. Cabada Monument 1, Lee Parsons (1981: 263, 1986:16-17) has associated this stela with the "danzante" sub-type of low-relief sculpture typical of the Late Olmec-Post Olmec Transition period (700-500 BC). Although some scholars have also argued in favor of its relationship to the Olmec-style art of the Middle Formative period (e.g. Joralemon 1971: 21; Smith 1963: 207); others have proposed a much later Classic period date (Cervantes 1976: 322). More recently, some researchers have demonstrated that at least three of the glyphs and designs on the stela are similar to the epi-Olmec script and motifs of the Late Formative period monuments of Cerro de las Mesas (Pérez de Lara and Justeson 2006). This complex pattern of stylistic relationships suggests that the Alvarado stela may be a Middle Formative period heirloom or a Late Formative period stela, which follows the format of Olmec-style stelae (Miller 1991: 30-31, 35). This monument contains one pit on the upper part of the juncture between its front and right sides.

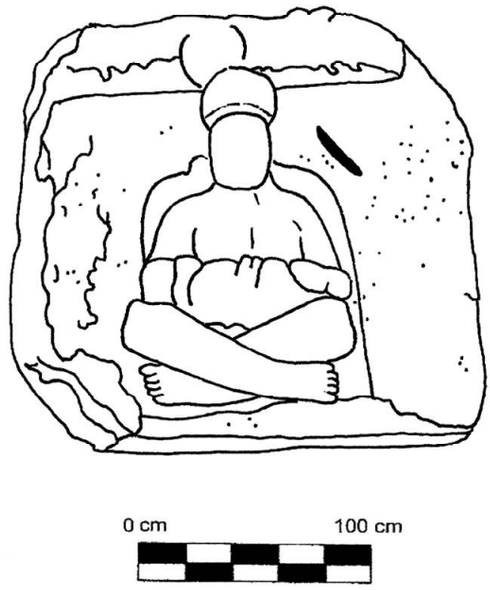


Fig. A.2 – La Venta Altar 2 (La Venta Park Museum, Villahermosa, Tabasco).
Drawing by the author.

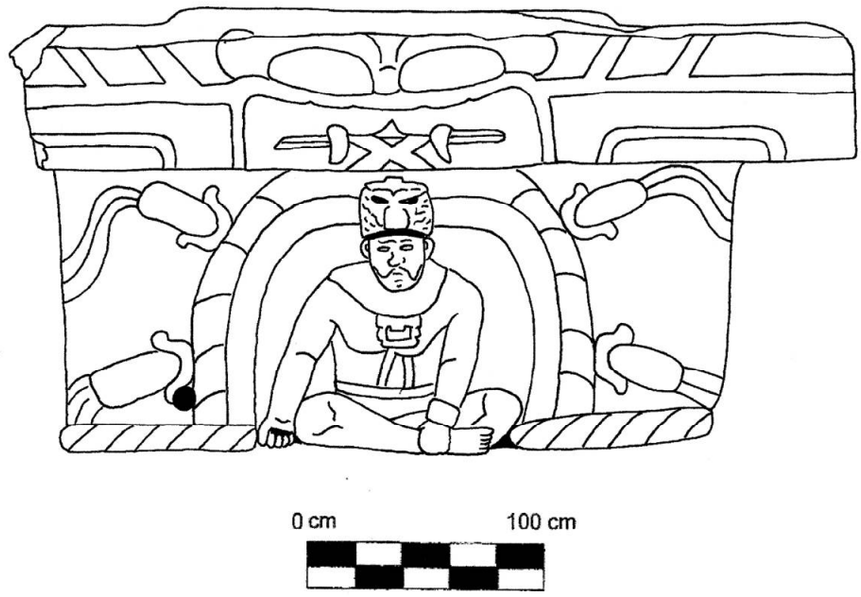


Fig. A.3 – La Venta Altar 4 (La Venta Park Museum, Villahermosa, Tabasco).
Drawing by the author.

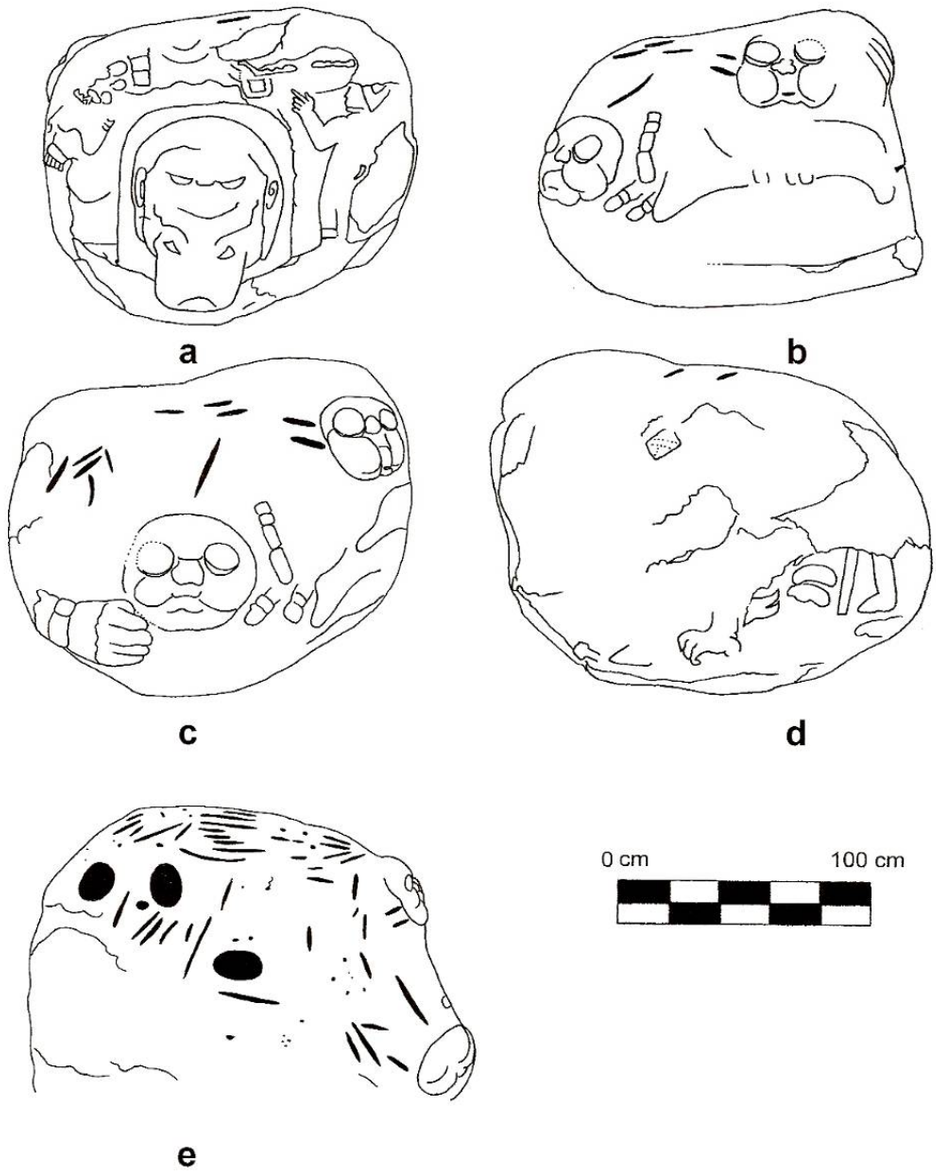


Fig. A.4 – La Venta Altar 7 (La Venta Park Museum, Villahermosa, Tabasco): (a) frontal view; (b) right profile; (c) posterior view; (d) left profile; and (e) oblique, superior view from the back. Drawings by the author.

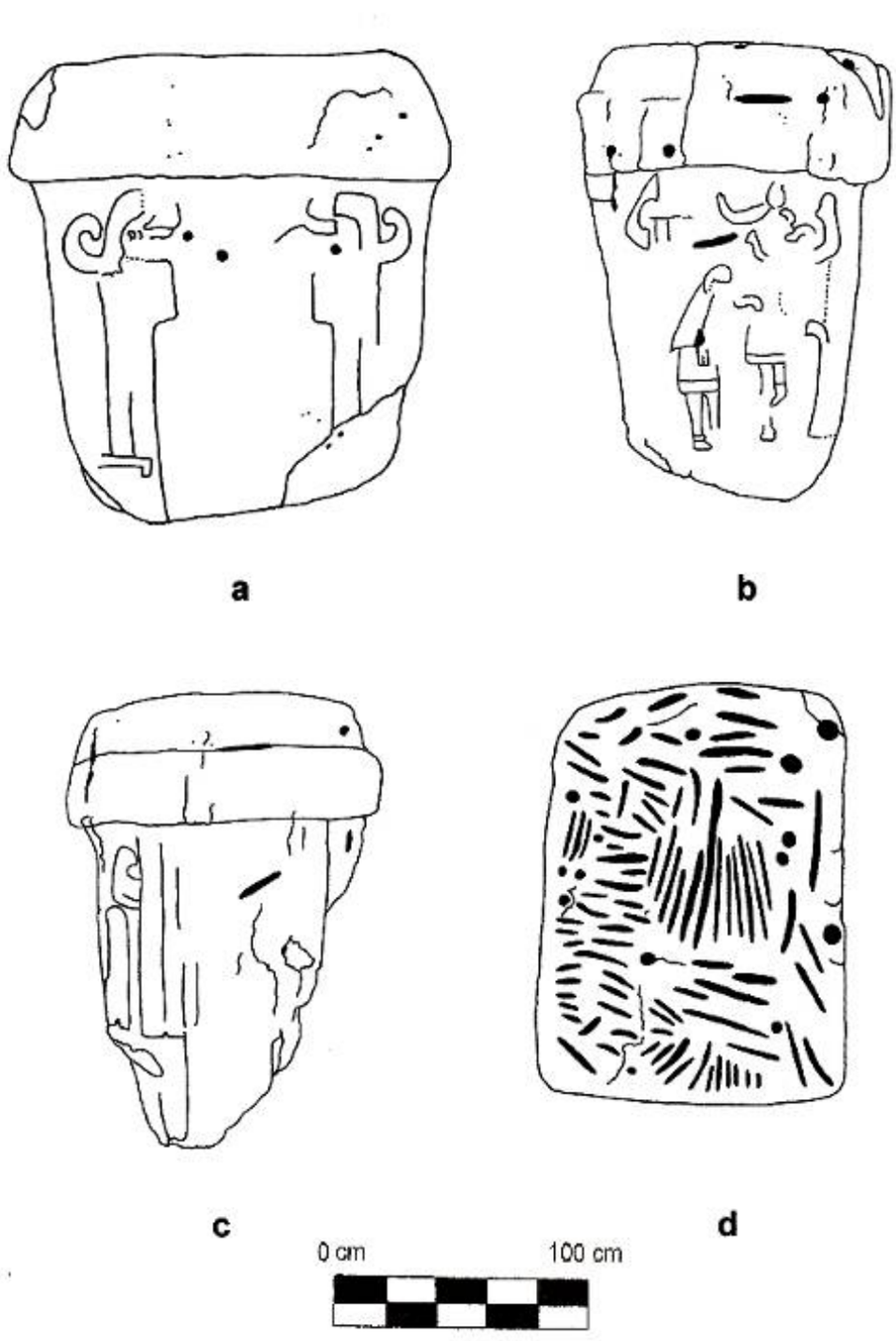


Fig. A.5 – La Venta Altar 8 (La Venta Site Museum, La Venta, Tabasco):
(a) frontal view; (b) left profile; (c) right profile; and (d) superior facet. Drawings by the author.

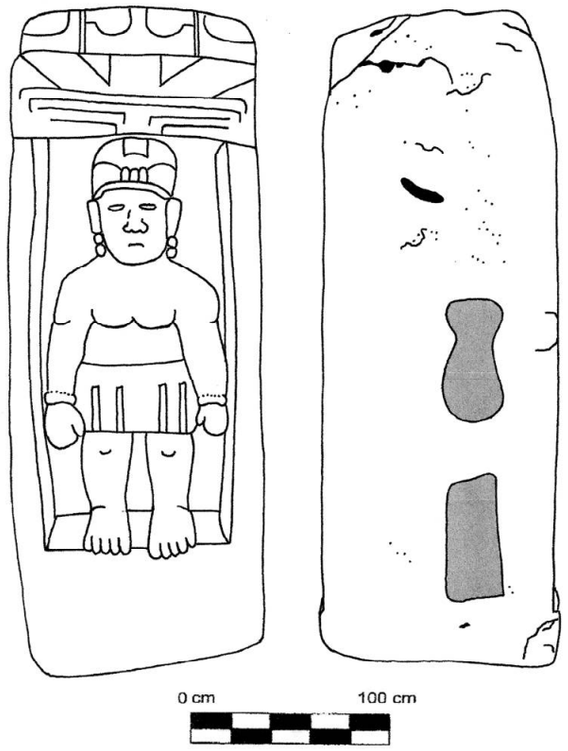


Fig. A.6 – La Venta Stela 1 (La Venta Park Museum, Villahermosa, Tabasco): front view (left) and posterior view (right). Drawings by the author.

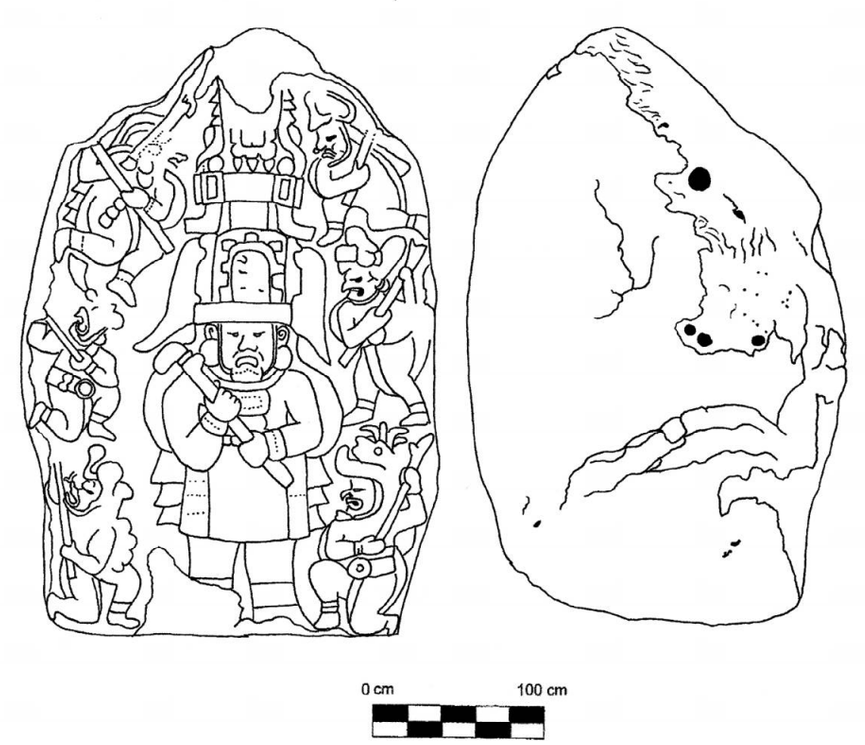


Fig. A.7 – La Venta Stela 2 (La Venta Park Museum, Villahermosa, Tabasco): front view (left) and right profile (right). Drawings by the author.

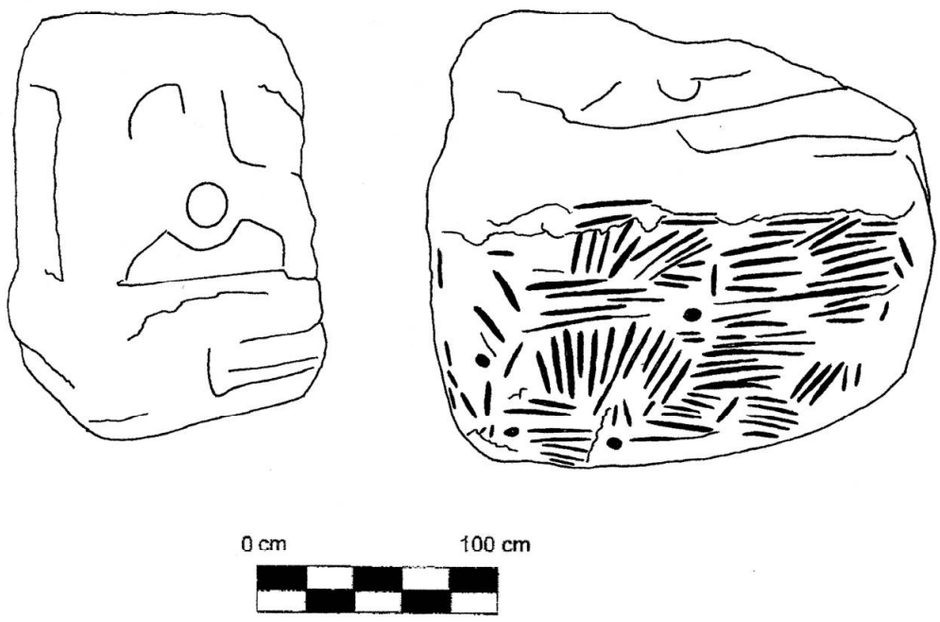


Fig. A.8 – La Venta Stela 4: front view (left) and right profile (right).
Drawings by the author (after Stirling 1943:52, Plates 33c and 33d).

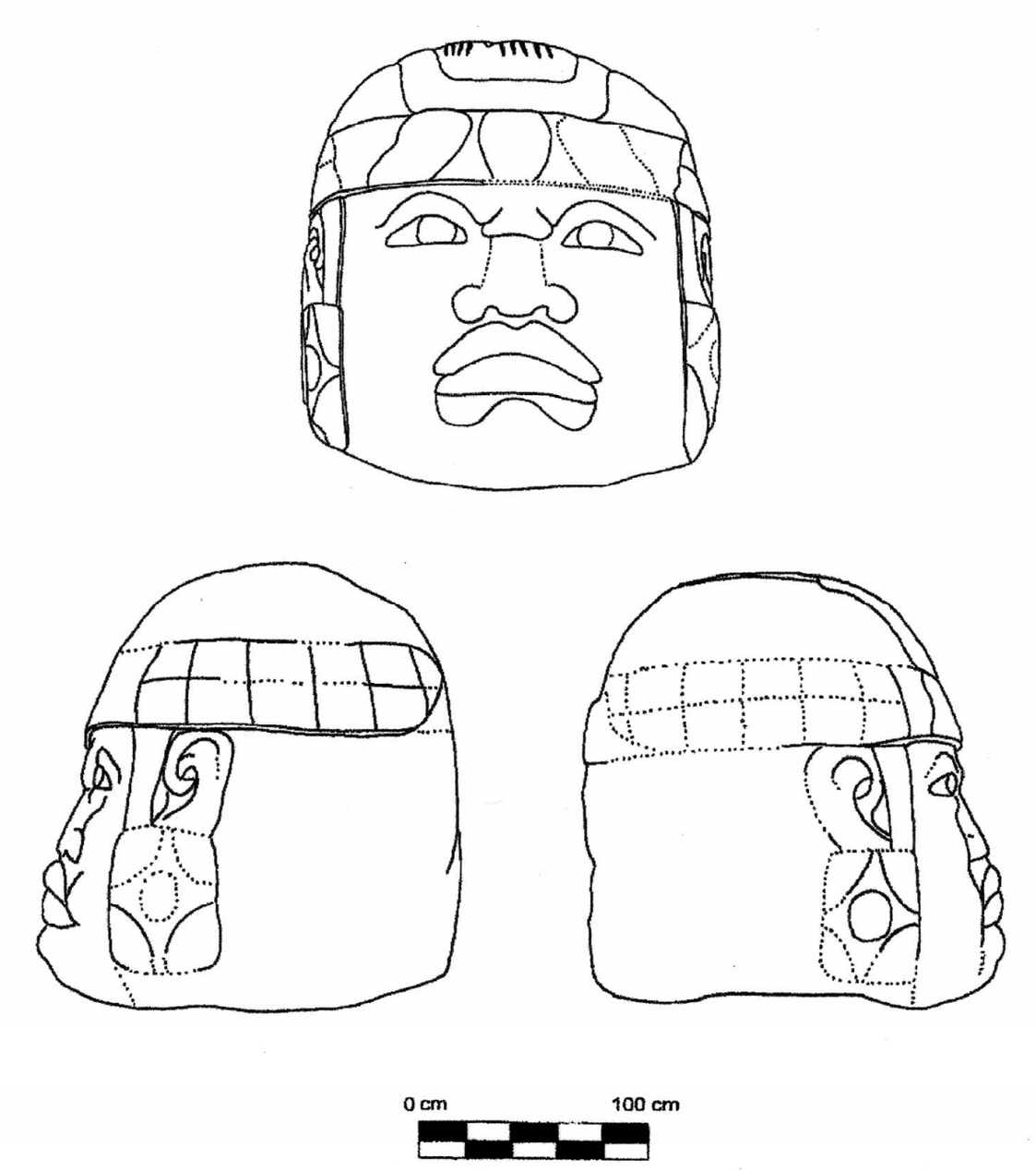


Fig. A.9 – La Venta Monument 1 (La Venta Park Museum, Villahermosa, Tabasco): front view (top), left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Clewlow, Cowan, O'Connell, and Benemann 1967: Figures 2 and 3).

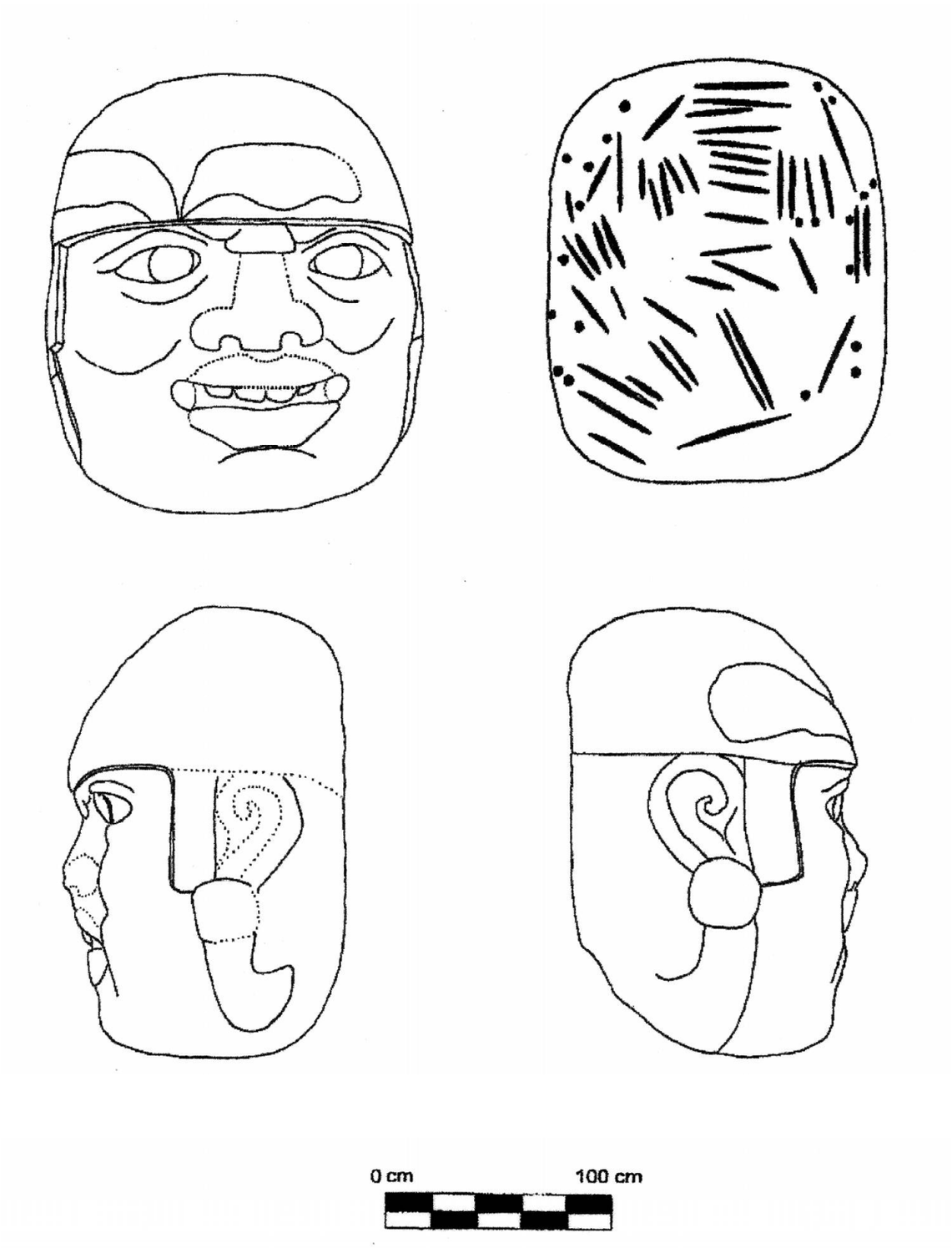


Fig. A.10 – La Venta Monument 2 (Regional Museum of Anthropology Carlos Pellicer Cámara, Villahermosa, Tabasco): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Clewlow, Cowan, O'Connell, and Benemann 1967: Figures 4 and 5; posterior view after Steede and Athy 2000: Figure 6).

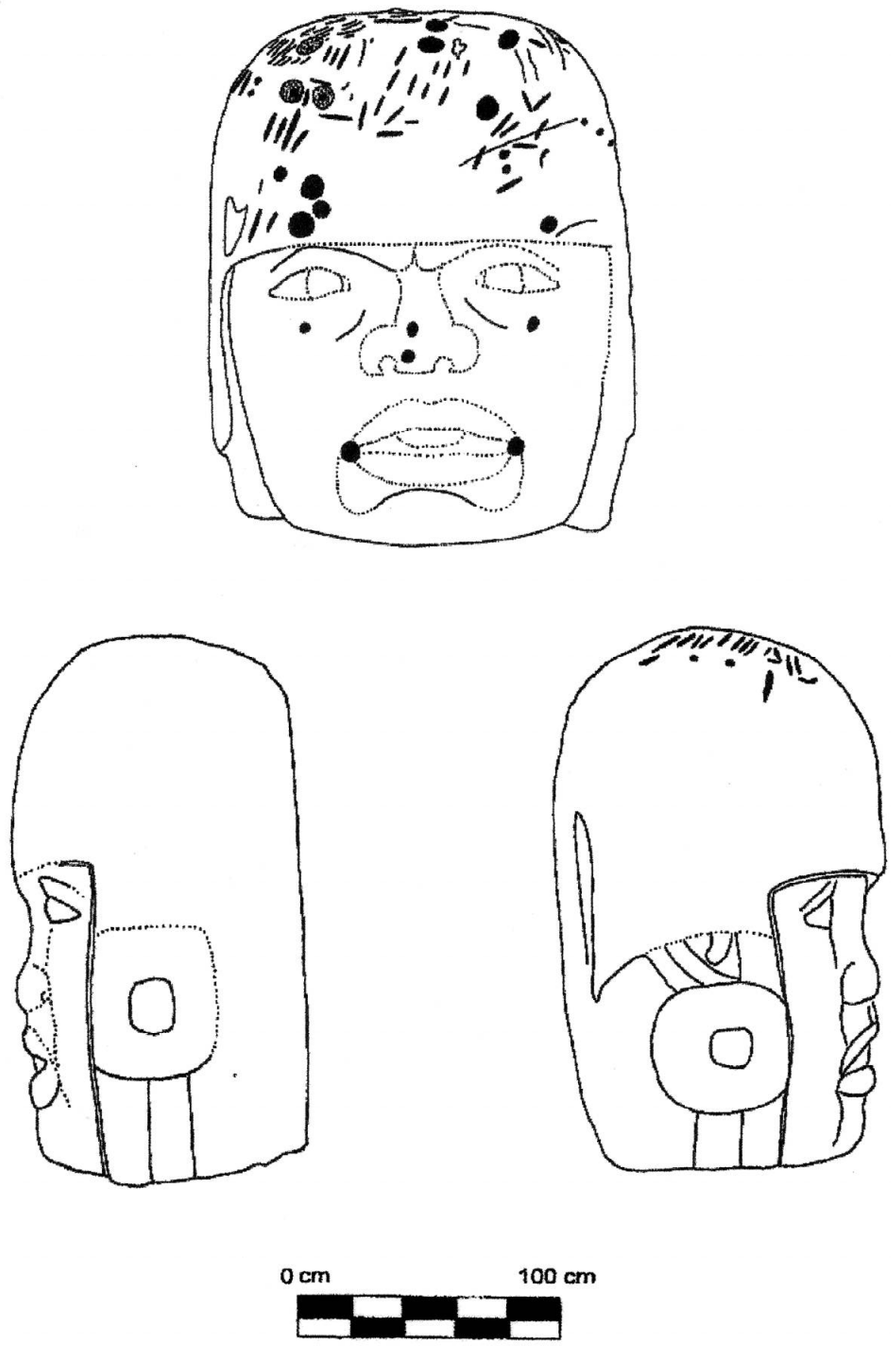


Fig. A.11 – La Venta Monument 3 (La Venta Park Museum, Villahermosa, Tabasco): front view (top); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Clewlow, Cowan, O'Connell, and Benemann 1967: Figures 6 and 7).

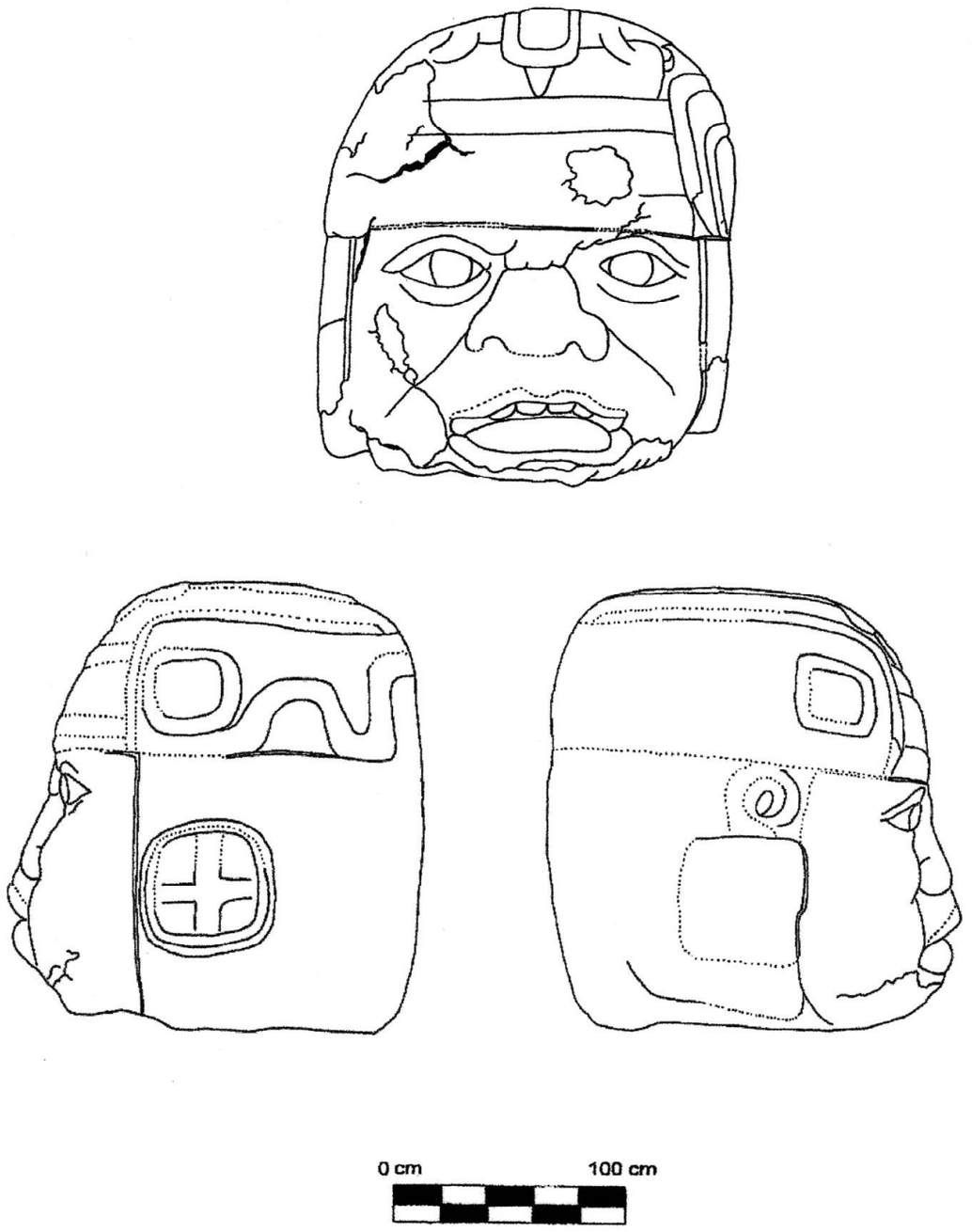


Fig. A.12 – La Venta Monument 4 (La Venta Park Museum, Villahermosa, Tabasco): front view (top); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Clewlow, Cowan, O'Connell, and Benemann 1967: Figures 8 and 9).

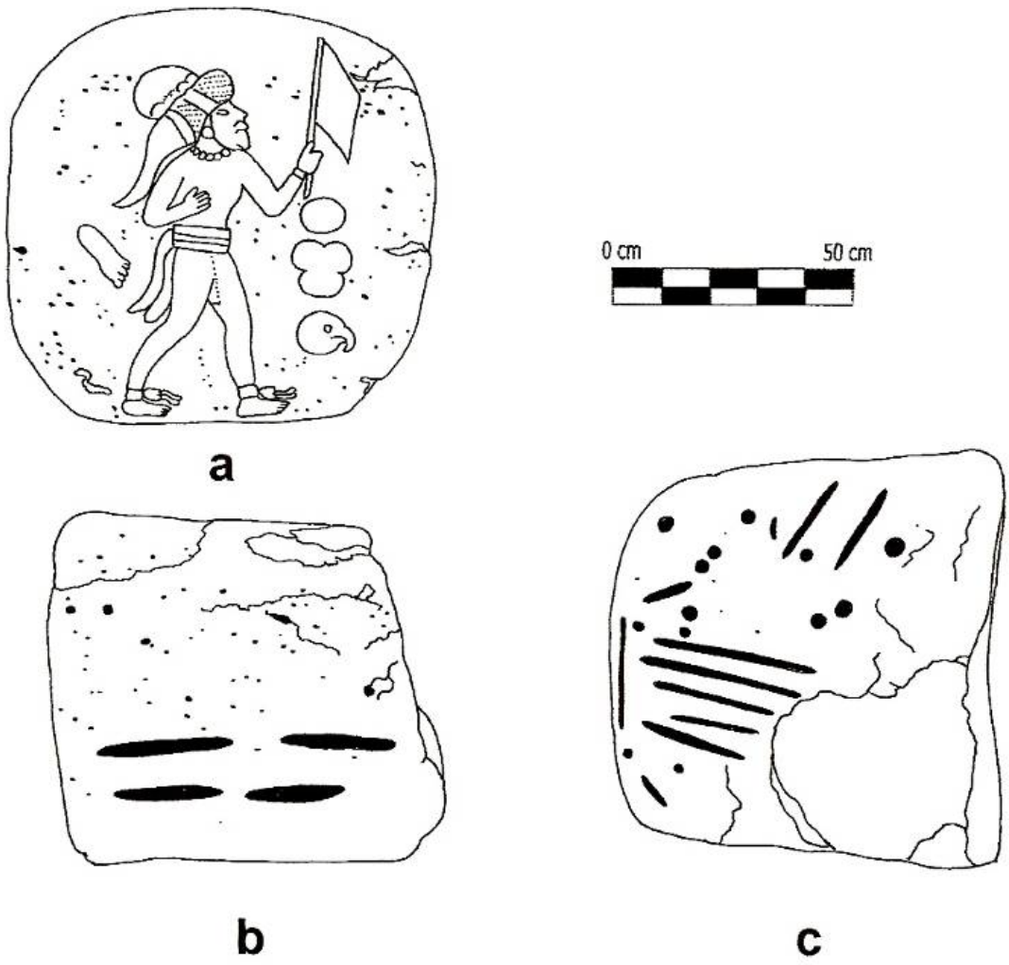
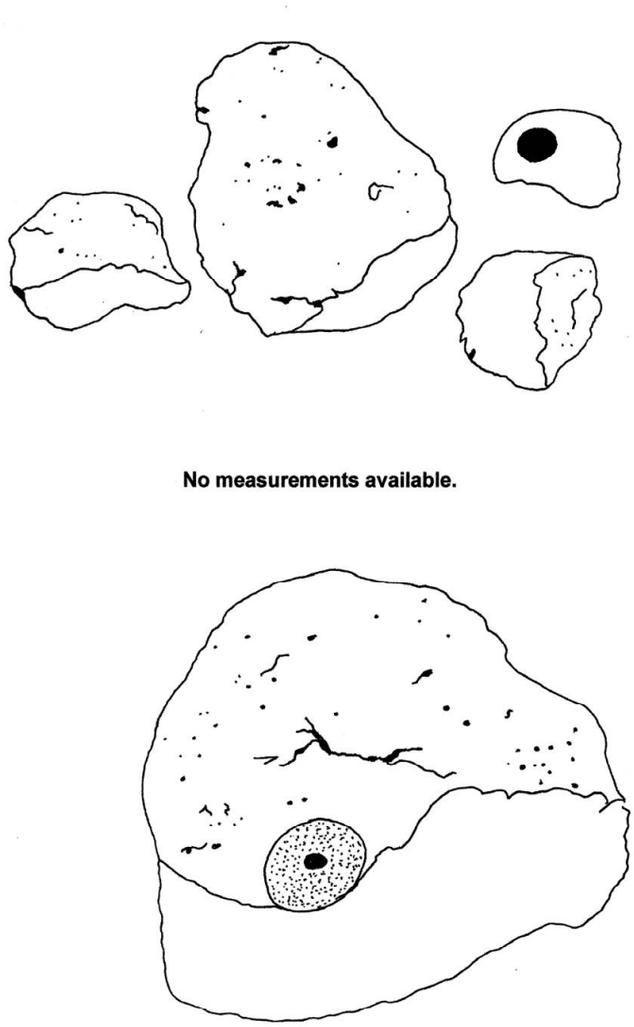
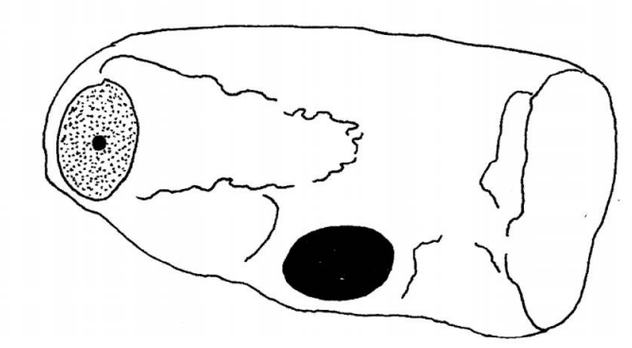


Fig. A.13 – La Venta Monument 13 (La Venta Park Museum, Villahermosa, Tabasco): (a) front view; (b) left profile; and (c) superior view. Drawings by the author.



No measurements available.

Fig. A.14 – La Venta Monument 18: all four fragments of the monument (top) and a detailed view of the largest fragment (bottom). Drawings by the author (after Pohorilenko 1997:192, Fotos 6 and 7).



No measurements available.

Fig. A.15 – La Venta Monument 32 (La Venta Park Museum, Villahermosa, Tabasco). Drawing by the author (after Clewlow and Corson 1968:197, Plate 9e).

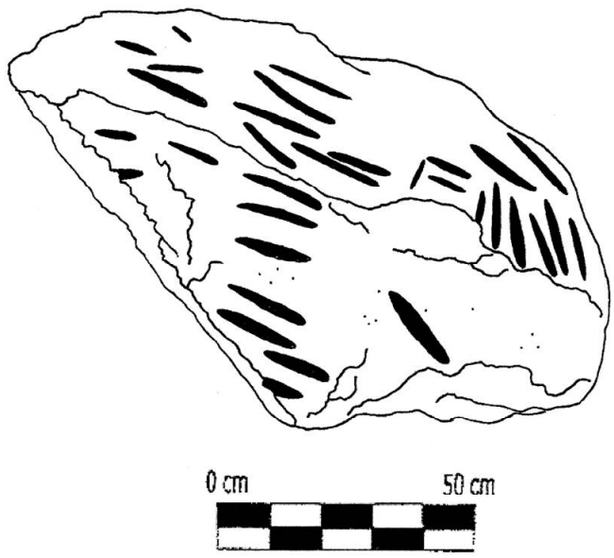


Fig. A.16 – La Venta Monument 36a.
Drawing by the author (after Clewlow and Corson 1968:198, Plate 10b).

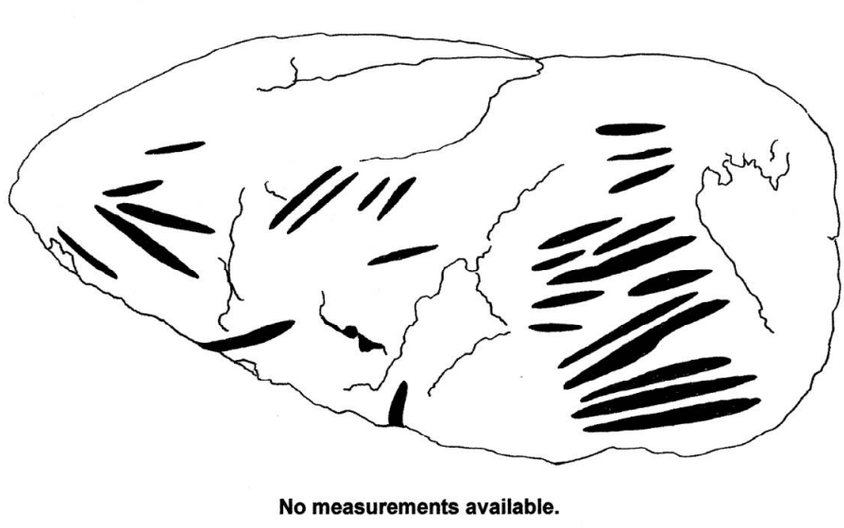


Fig. A.17 – La Venta Monument 36b
Drawing by the author (after Clewlow and Corson 1968:198, Plate 10e).

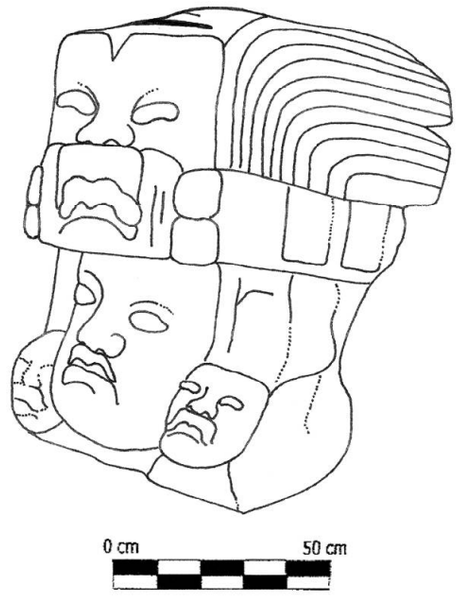


Fig. A.18 – La Venta Monument 44 (Regional Museum of Anthropology Carlos Pellicer Cámara, Villahermosa, Tabasco). Drawing by the author (after Clewlow and Corson 1968:200, Plate 12a).

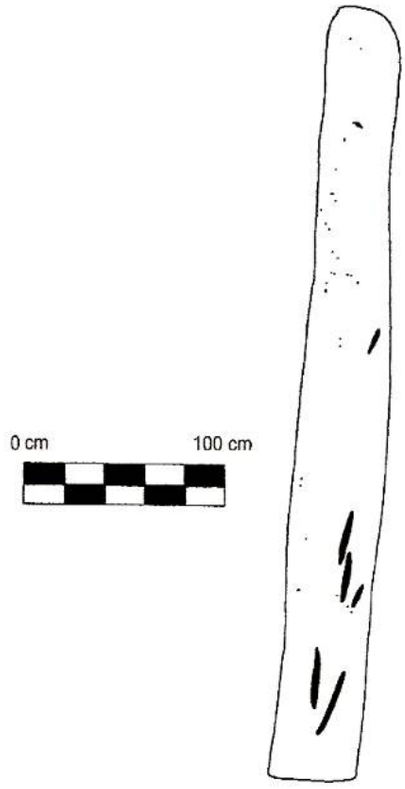


Fig. A.19 – La Venta Monument 47 (La Venta Park Museum, Villahermosa, Tabasco). Drawing by the author (after Clewlow and Corson 1968:200, Plate 12f).

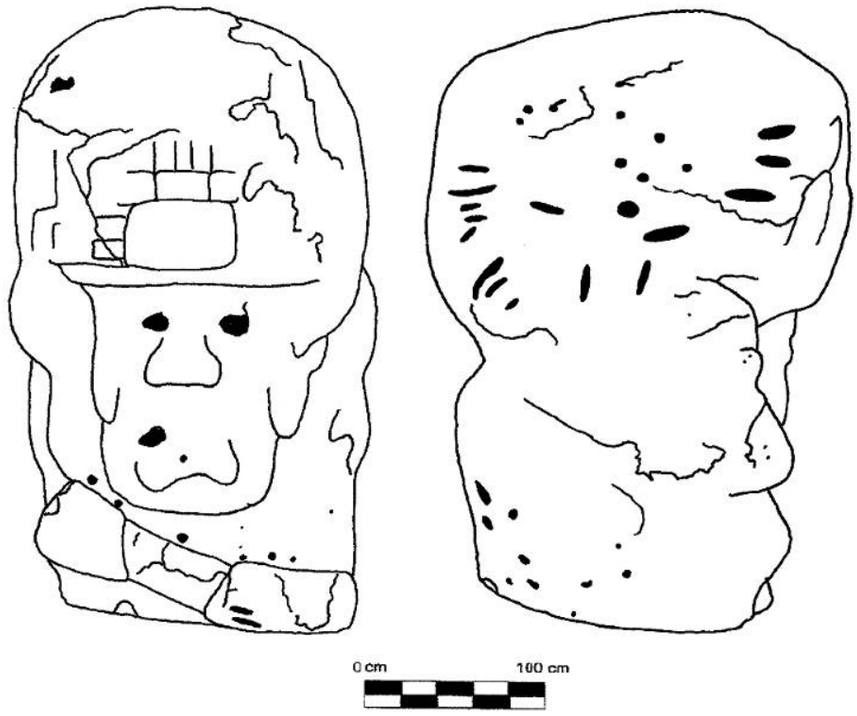


Fig. A.20 – La Venta Monument 52 (La Venta Site Museum, La Venta, Tabasco): front view (left) and right profile (right). Drawings by the author.

Fig. A.21 – La Venta Monument 53 (La Venta Site Museum, La Venta, Tabasco): front view (left) and right profile (right). Drawings by the author.

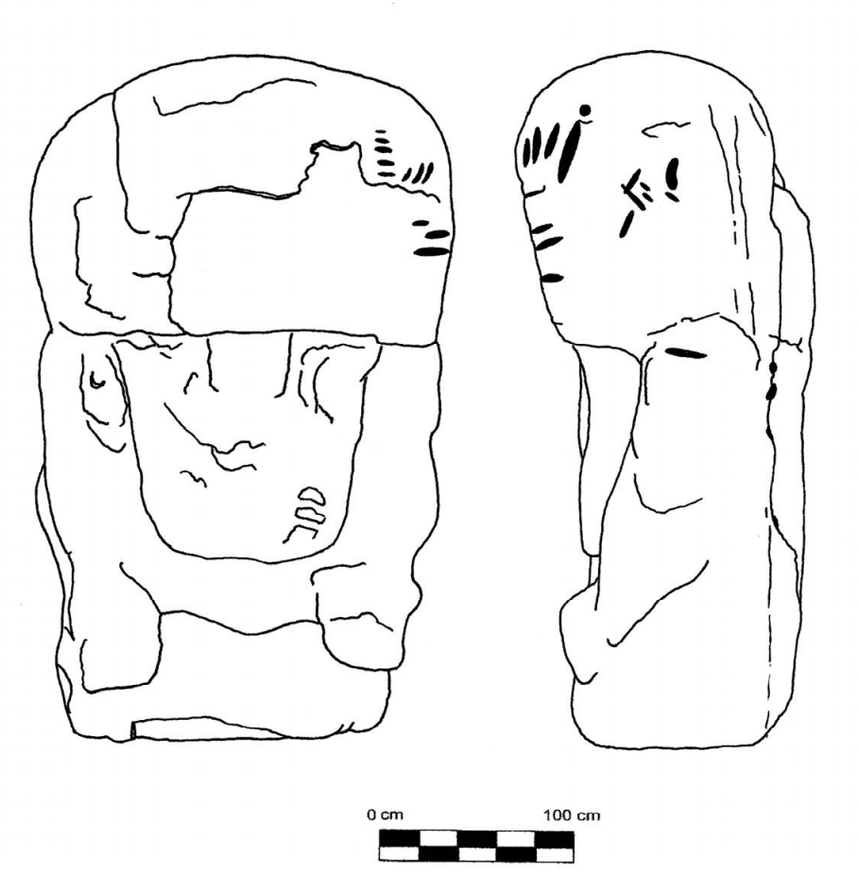


Fig. A.22 – La Venta Monument 54 (La Venta Site Museum, La Venta, Tabasco): front view (left) and left profile (right). Drawings by the author.

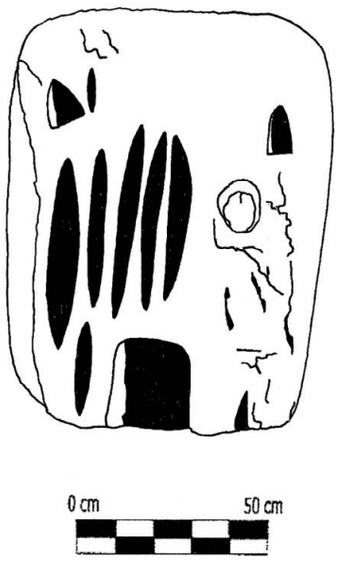


Fig. A.23 – La Venta Monument 57 (Regional Museum of Anthropology Carlos Pellicer Cámara, Villahermosa, Tabasco). Drawing by the author (after Clewlow and Corson 1968:201, Plate 13a).

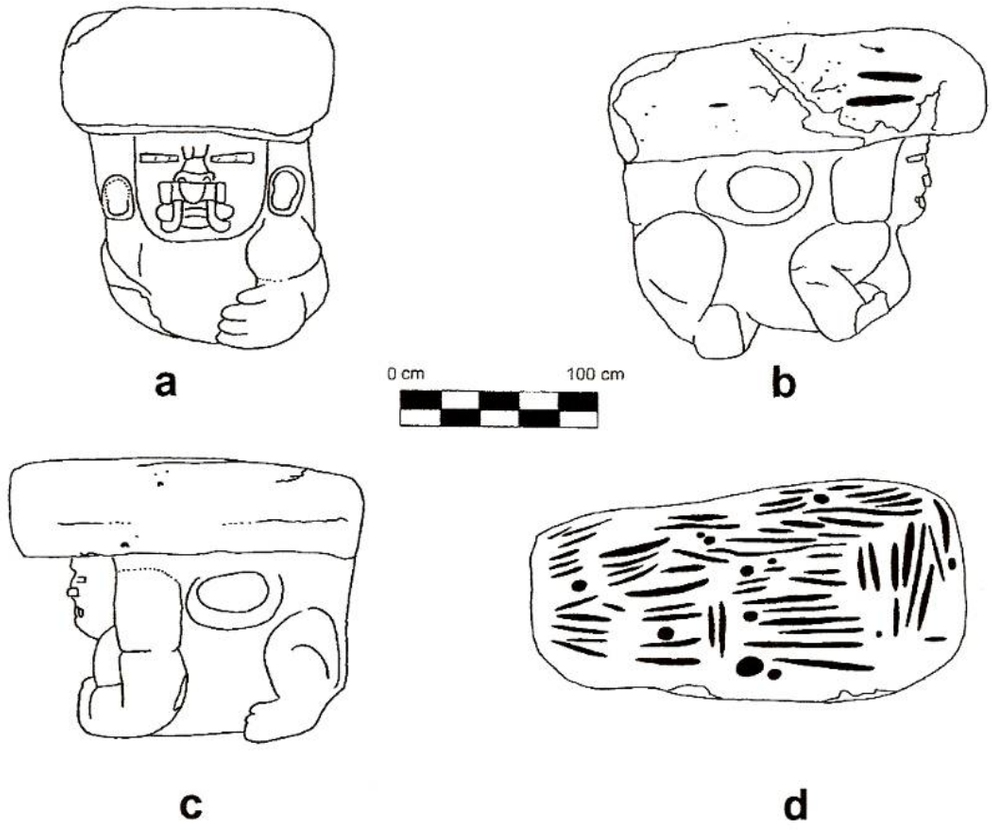


Fig. A.24 – La Venta Monument 59 (La Venta Park Museum, Villahermosa, Tabasco): (a) frontal view; (b) right profile; (c) left profile; and (d) superior view. Drawings by the author.

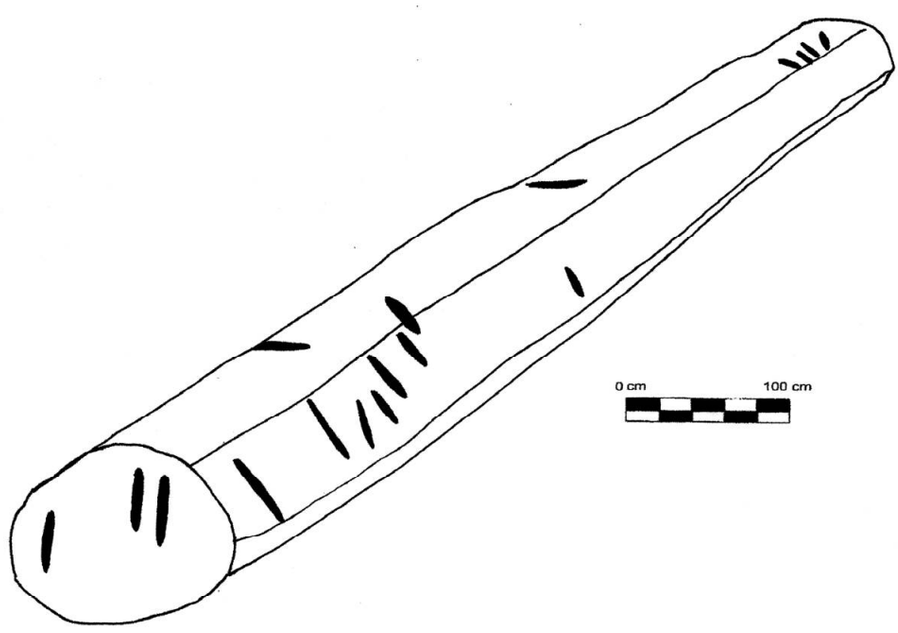


Fig. A.25 – La Venta Monument 62 (La Venta Park Museum, Villahermosa, Tabasco). Drawing by the author (after Clewlow and Corson 1968:201, Plate 13e).

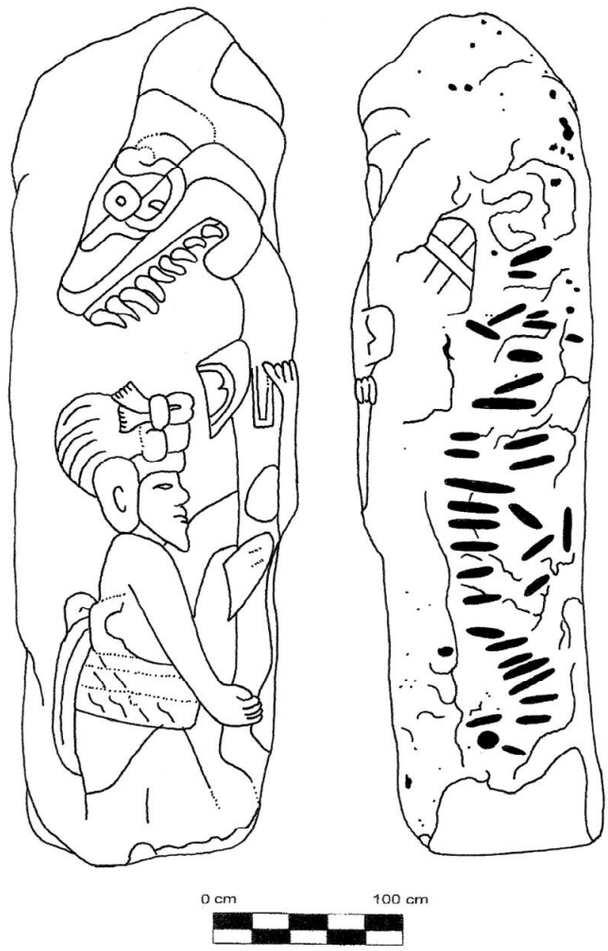


Fig. A.26 – La Venta Monument 63 (La Venta Park Museum, Villahermosa, Tabasco): frontal view (left) and left profile (right). Drawings by the author.

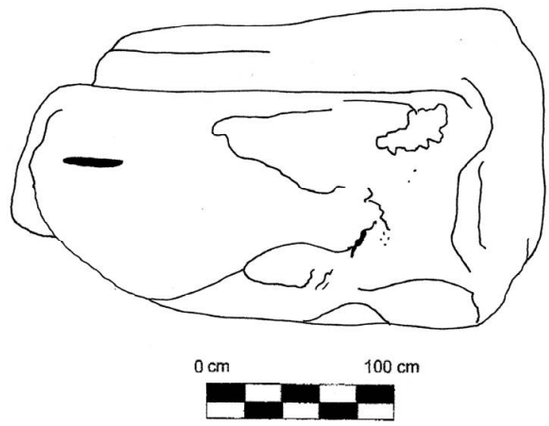


Fig. A.27 – La Venta Monument 67 (La Venta Park Museum, Villahermosa, Tabasco). Drawing by the author.

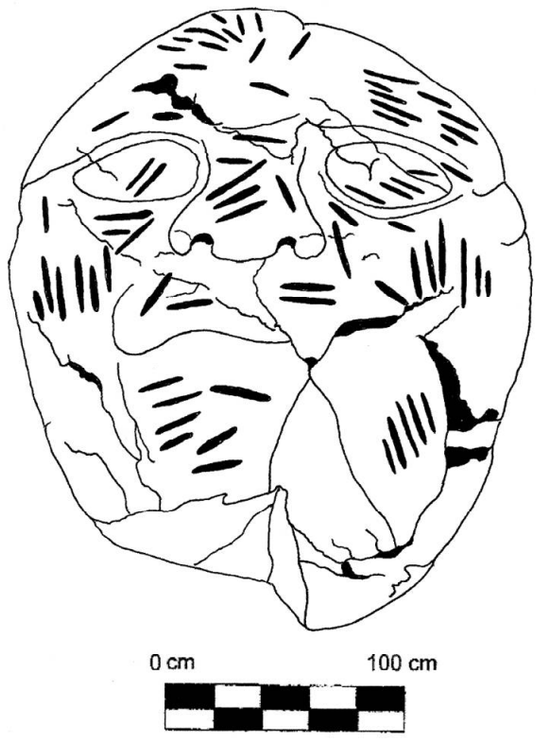


Fig. A.28 – La Venta Monument 68 (La Venta Park Museum, Villahermosa, Tabasco). Drawing by the author.

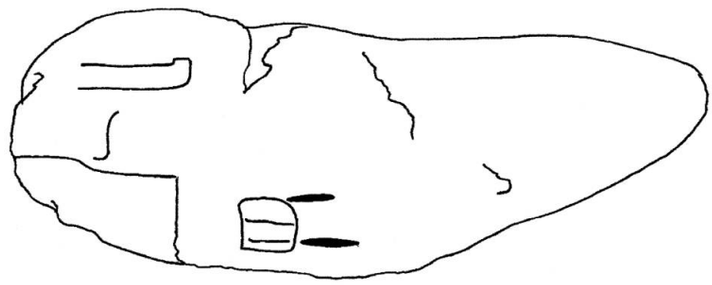


Fig. A.29 – La Venta Monument 69 (La Venta Park Museum, Villahermosa, Tabasco). Drawing by the author (after Clewlow and Corson 1968:202, Plate 14d).

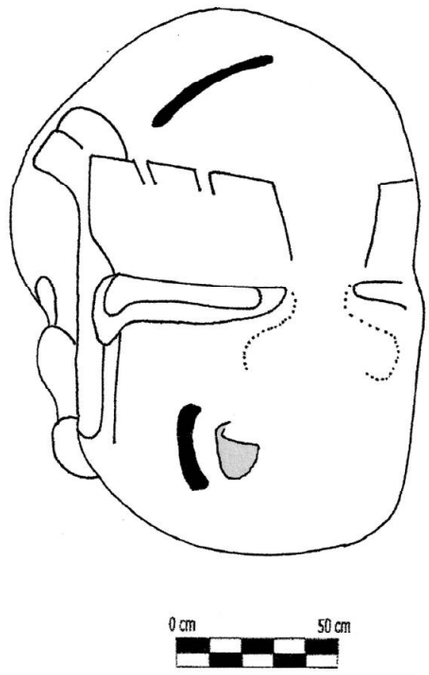
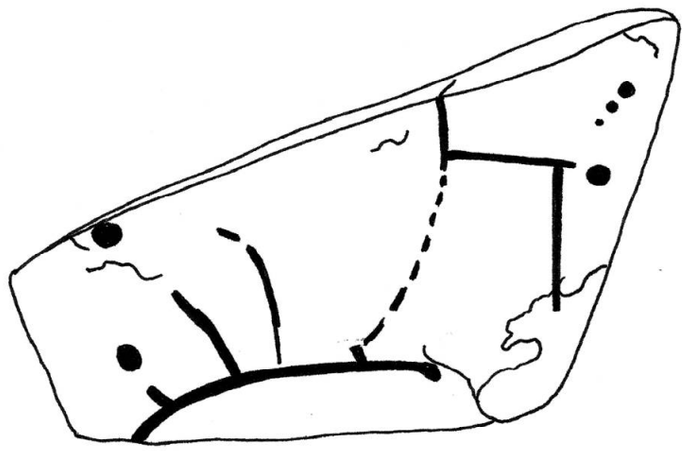


Fig. A.30 – La Venta Monument 78 (La Venta Park Museum, Villahermosa, Tabasco).
Drawing by the author.



No measurements available.

Fig. A.31 – La Venta Unnumbered Monument (La Venta Park Museum, Villahermosa, Tabasco).
Drawing by the author.

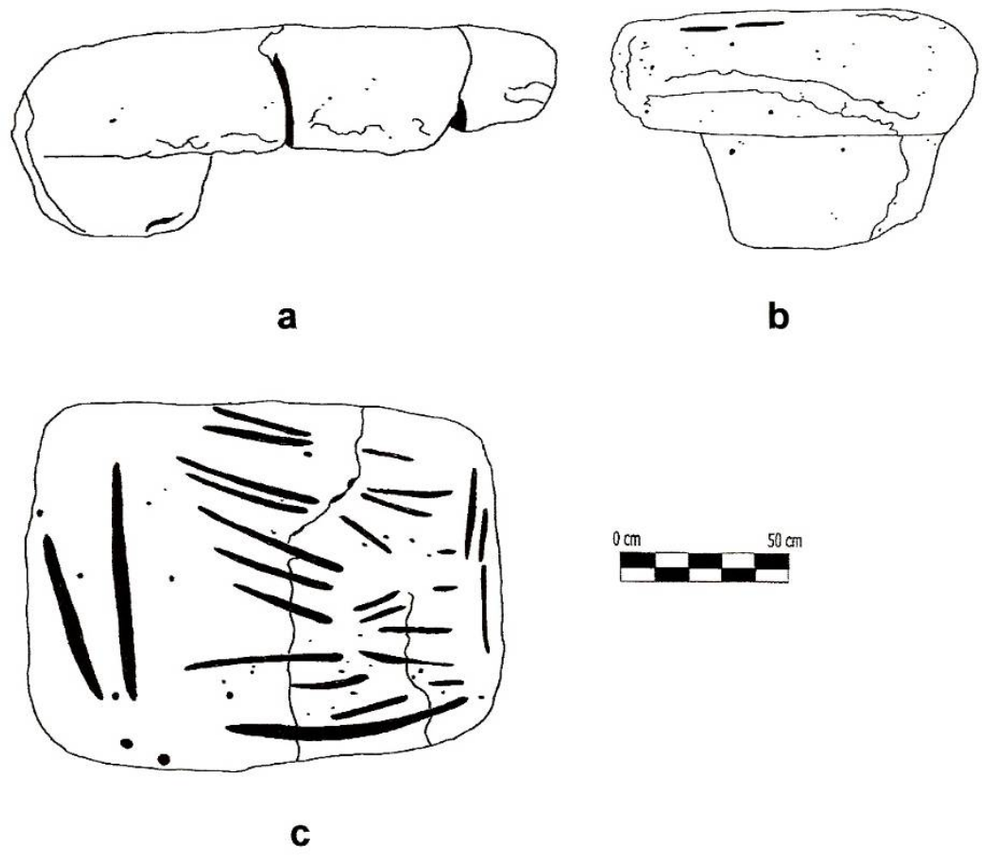


Fig. A.32 – La Venta Unnumbered Bench (La Venta Site Museum, La Venta, Tabasco): (a) front view; (b) right profile; and (c) superior view. Drawings by the author.

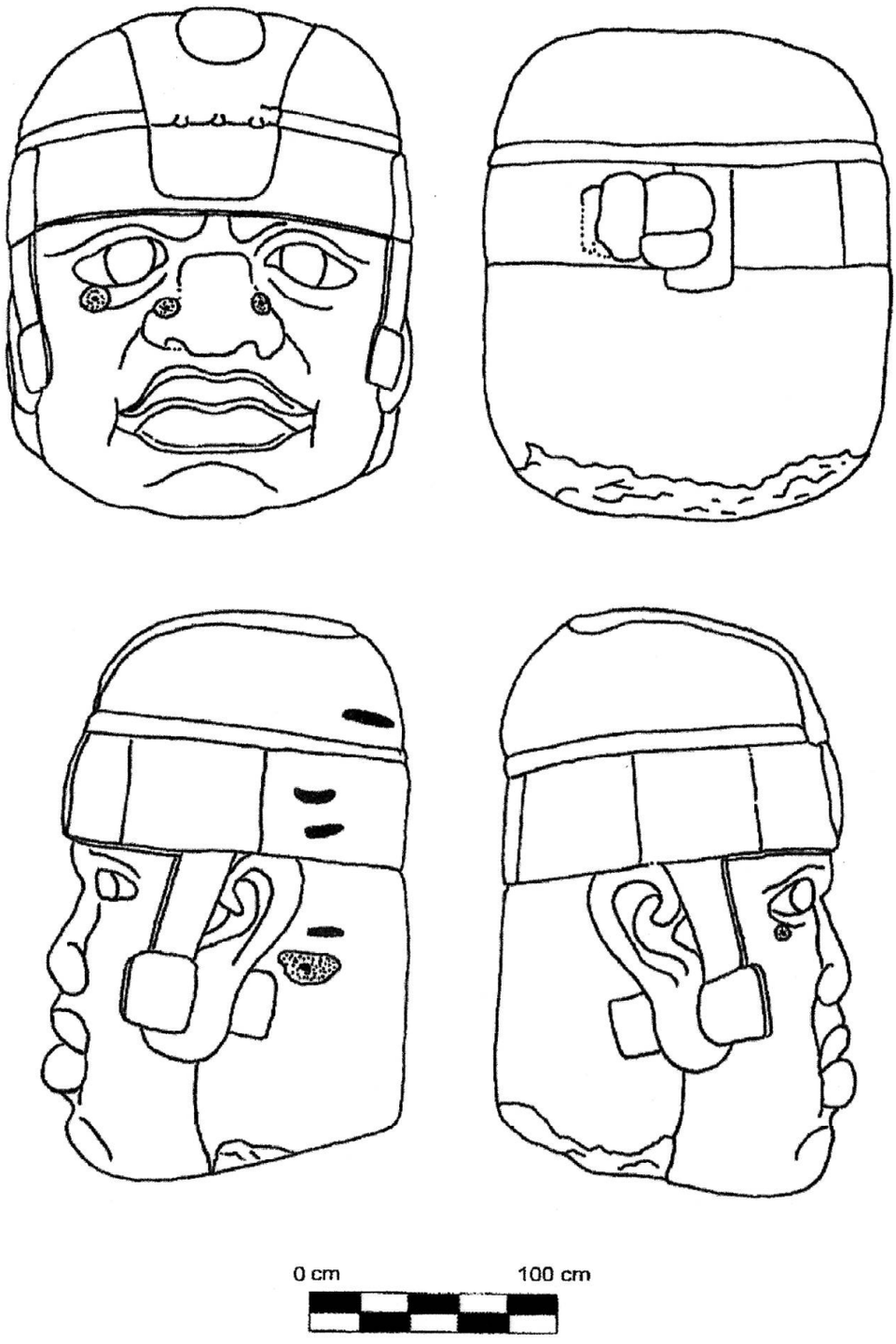


Fig. A.33 – San Lorenzo Monument 1 (Colossal Head 1) (Museum of Anthropology, Xalapa, Veracruz): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:40).

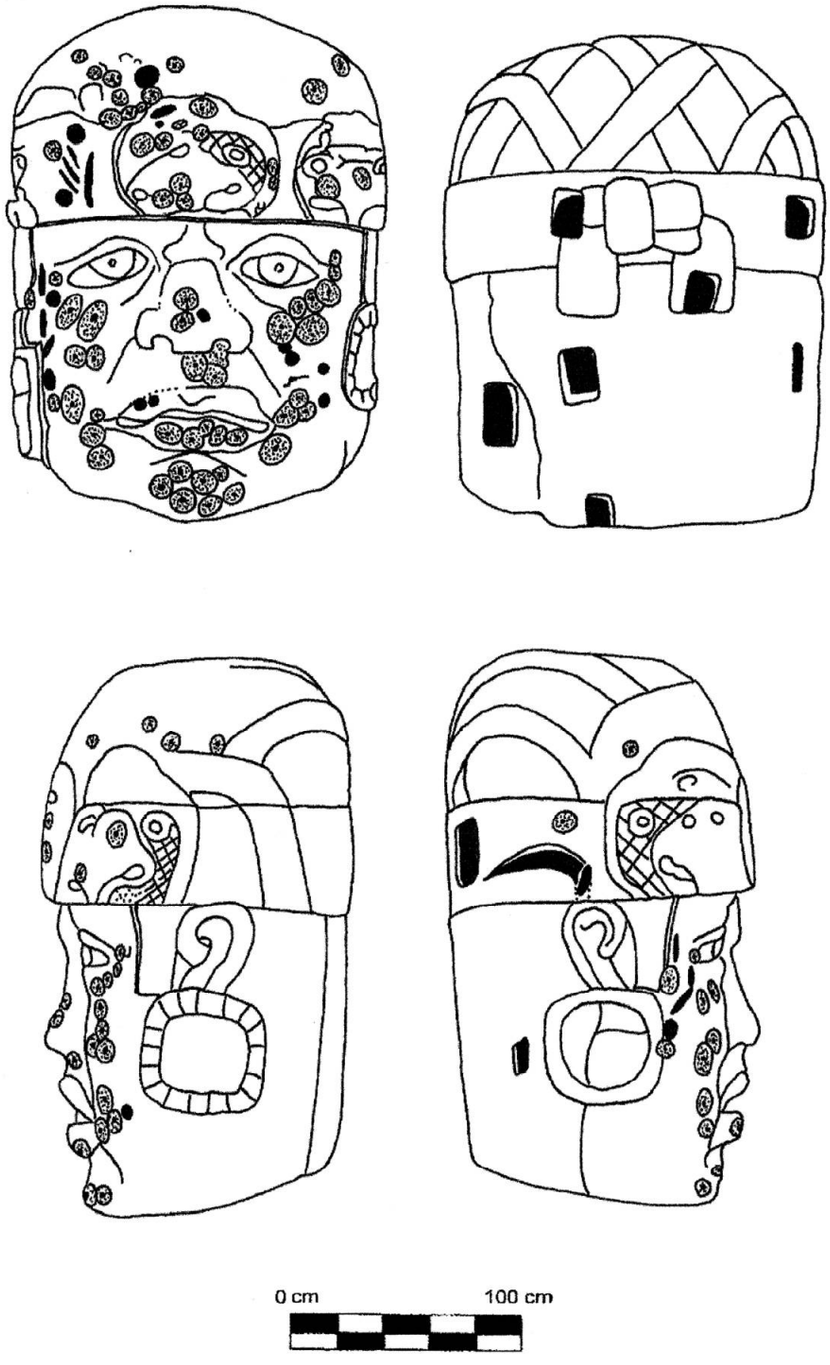


Fig. A.34 – San Lorenzo Monument 2 (Colossal Head 2) (National Museum of Anthropology, Mexico City): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:44-45).

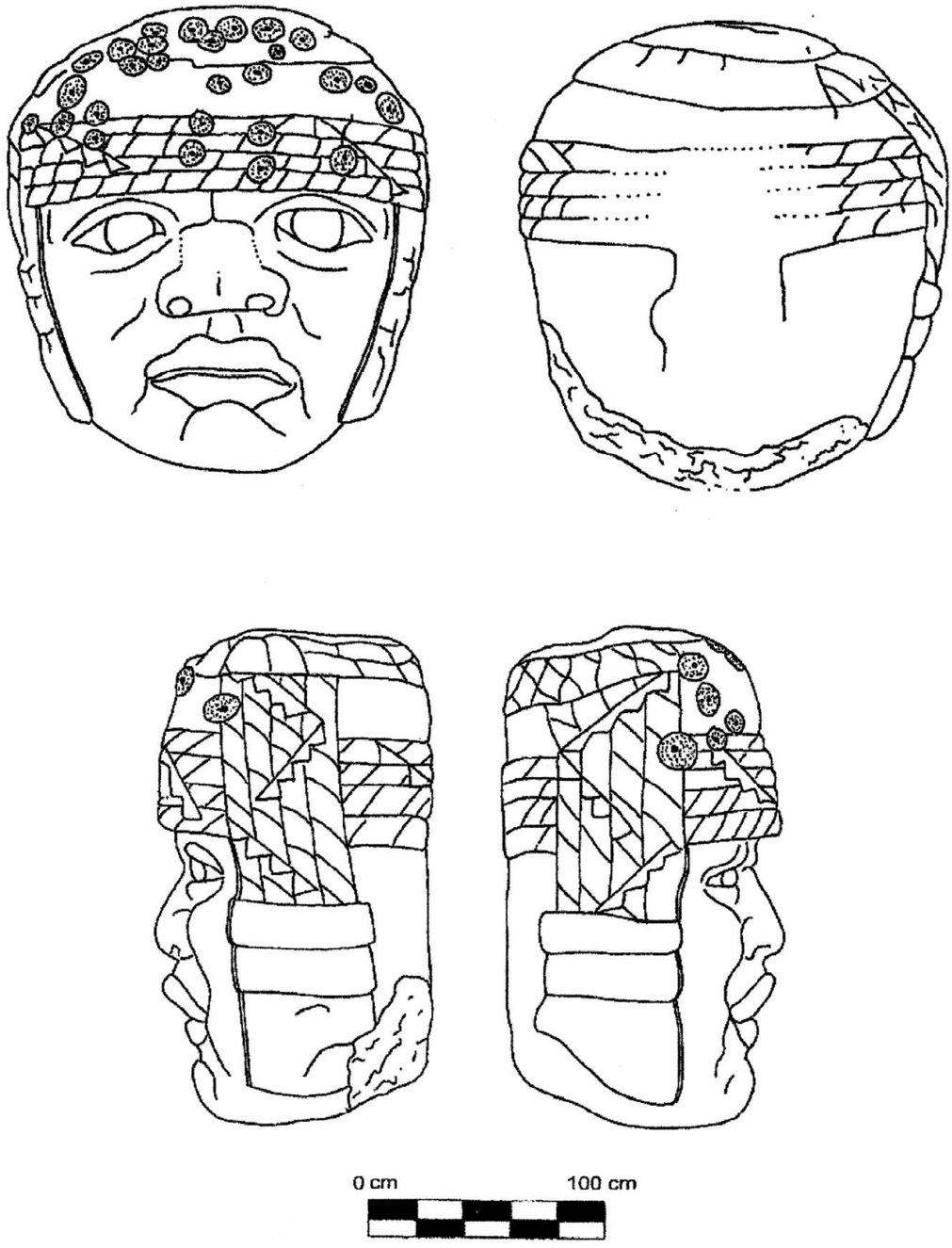


Fig. A.35 – San Lorenzo Monument 3 (Colossal Head 3) (Museum of Anthropology, Xalapa, Veracruz): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:48-49).

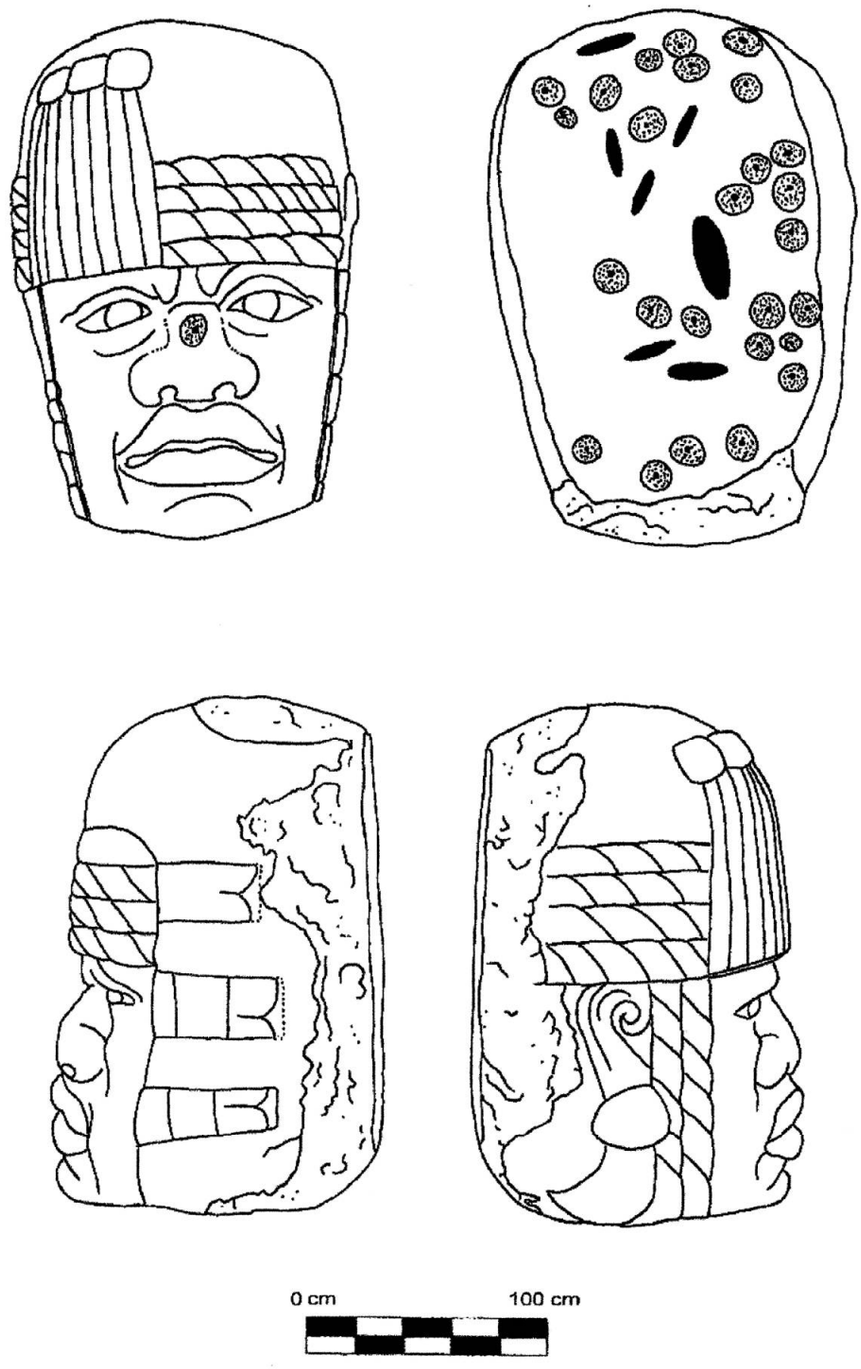


Fig. A.36 – San Lorenzo Monument 4 (Colossal Head 4) (Museum of Anthropology, Xalapa, Veracruz): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:50-51).

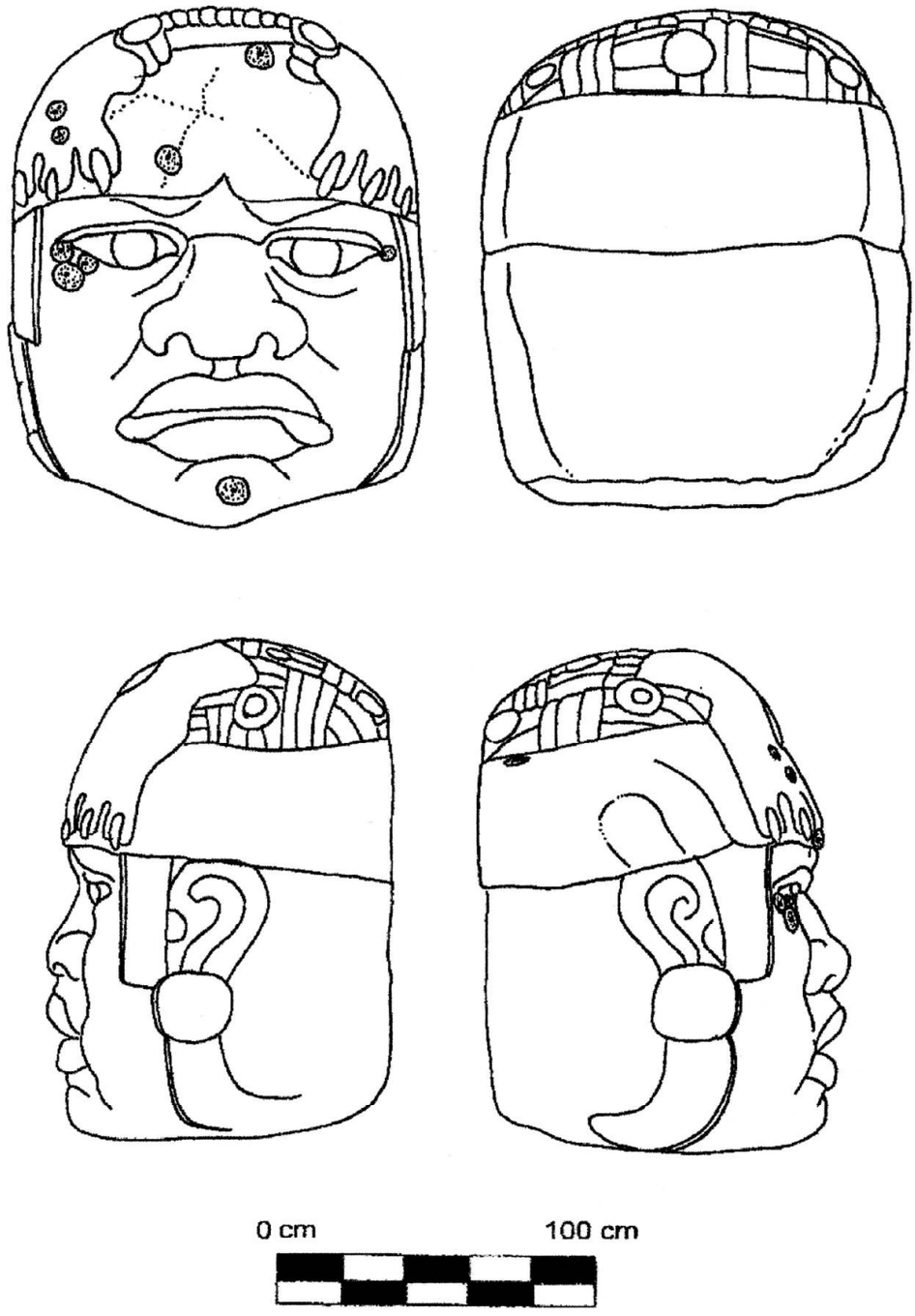


Fig. A.37 – San Lorenzo Monument 5 (Colossal Head 5) (Museum of Anthropology, Xalapa, Veracruz): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:54-55).

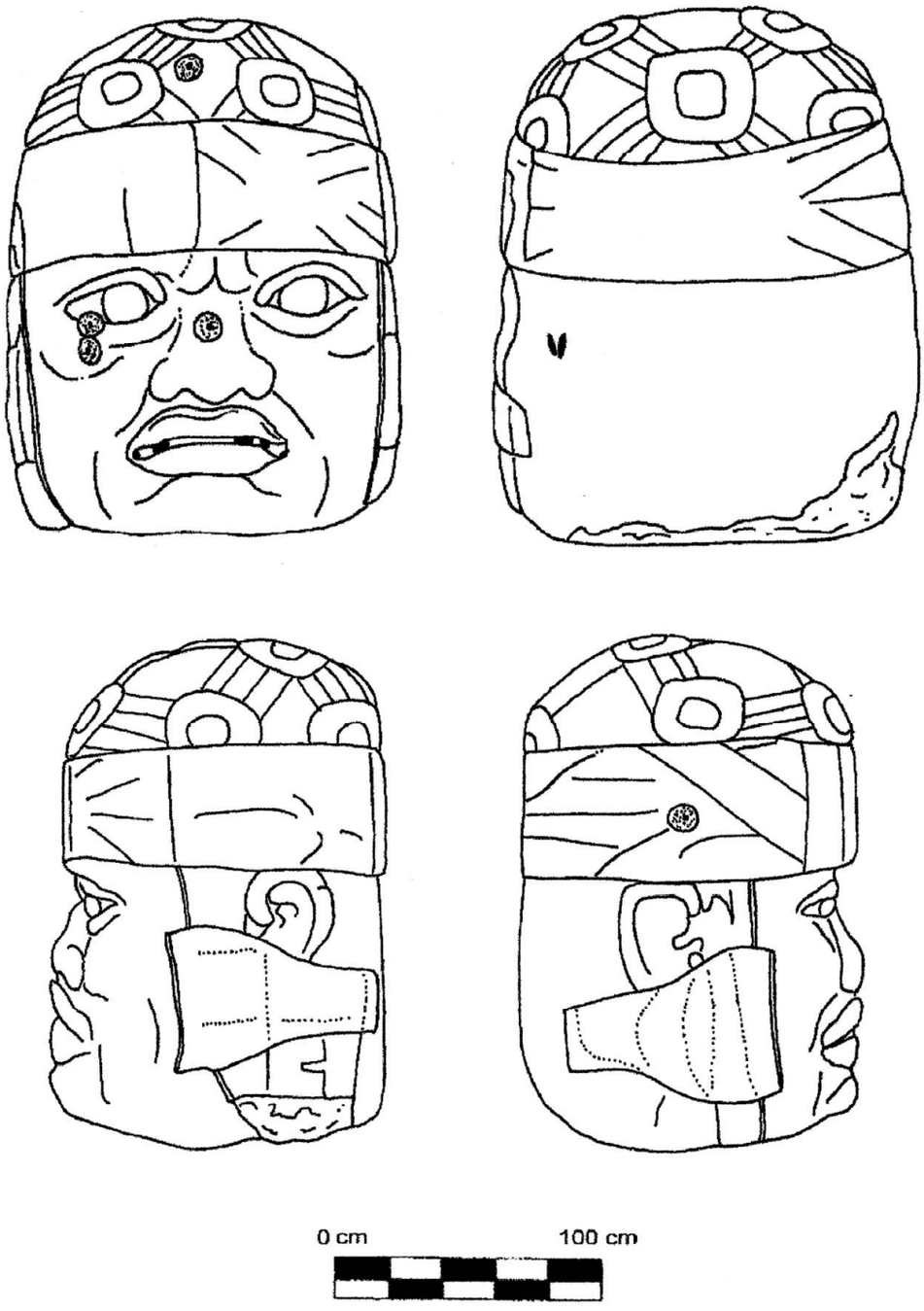


Fig. A.38 – San Lorenzo Monument 17 (Colossal Head 6) (National Museum of Anthropology, Mexico City): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:76-77).

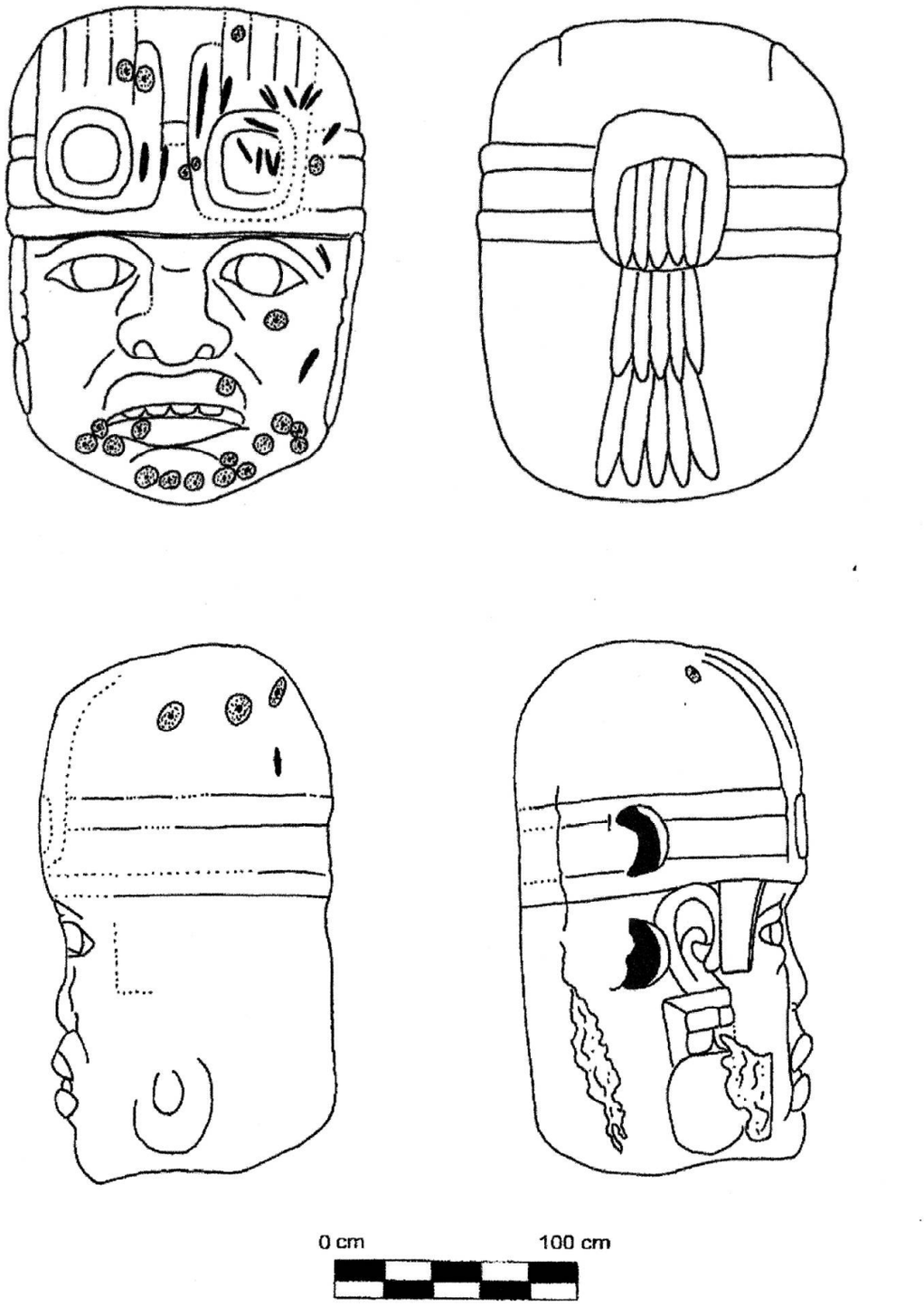


Fig. A.39 – San Lorenzo Monument 53 (Colossal Head 7) (Museum of Anthropology, Xalapa, Veracruz): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:116-117).

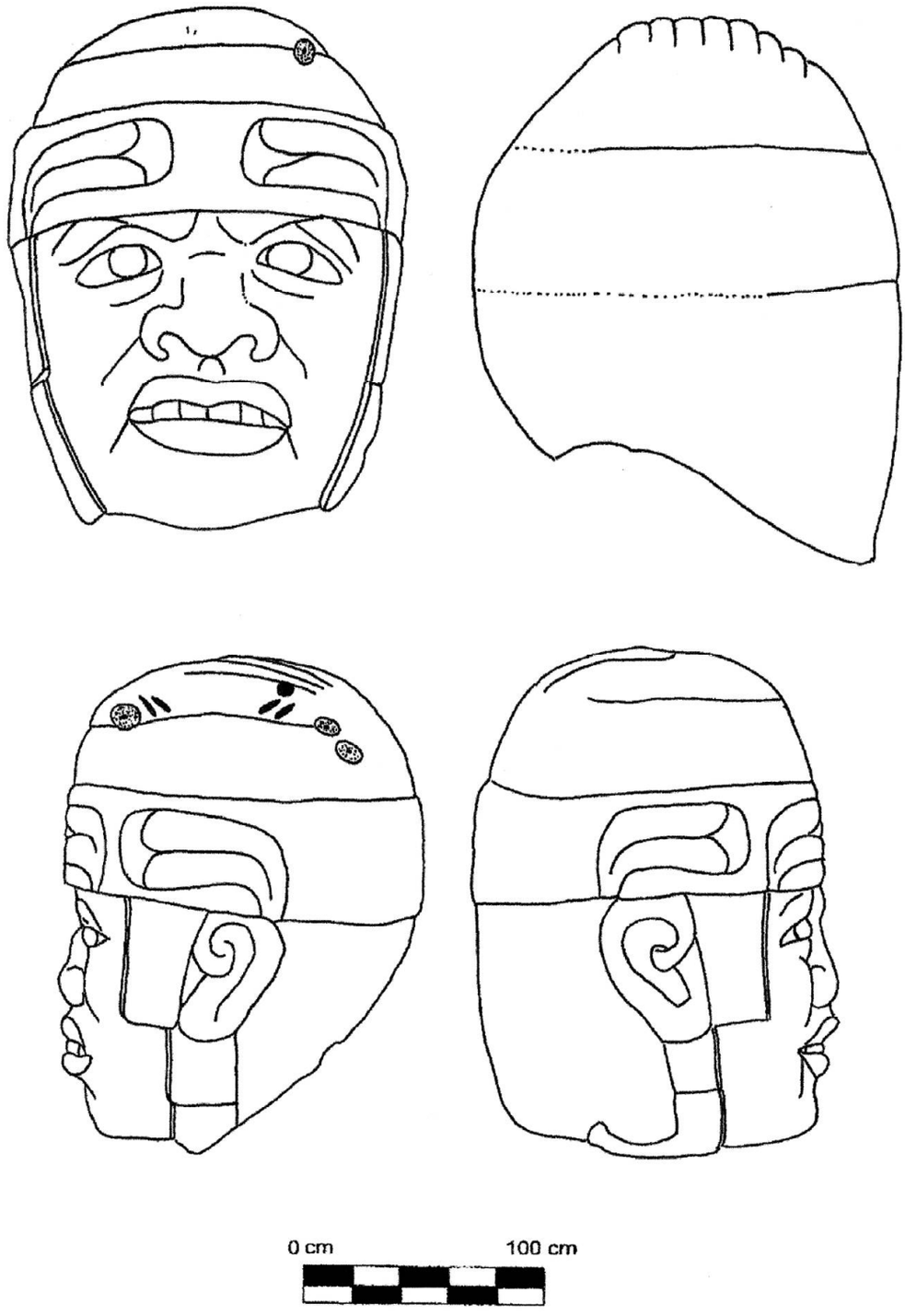


Fig. A.40 – San Lorenzo Monument 61 (Colossal Head 8) (Museum of Anthropology, Xalapa, Veracruz): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:126-127).

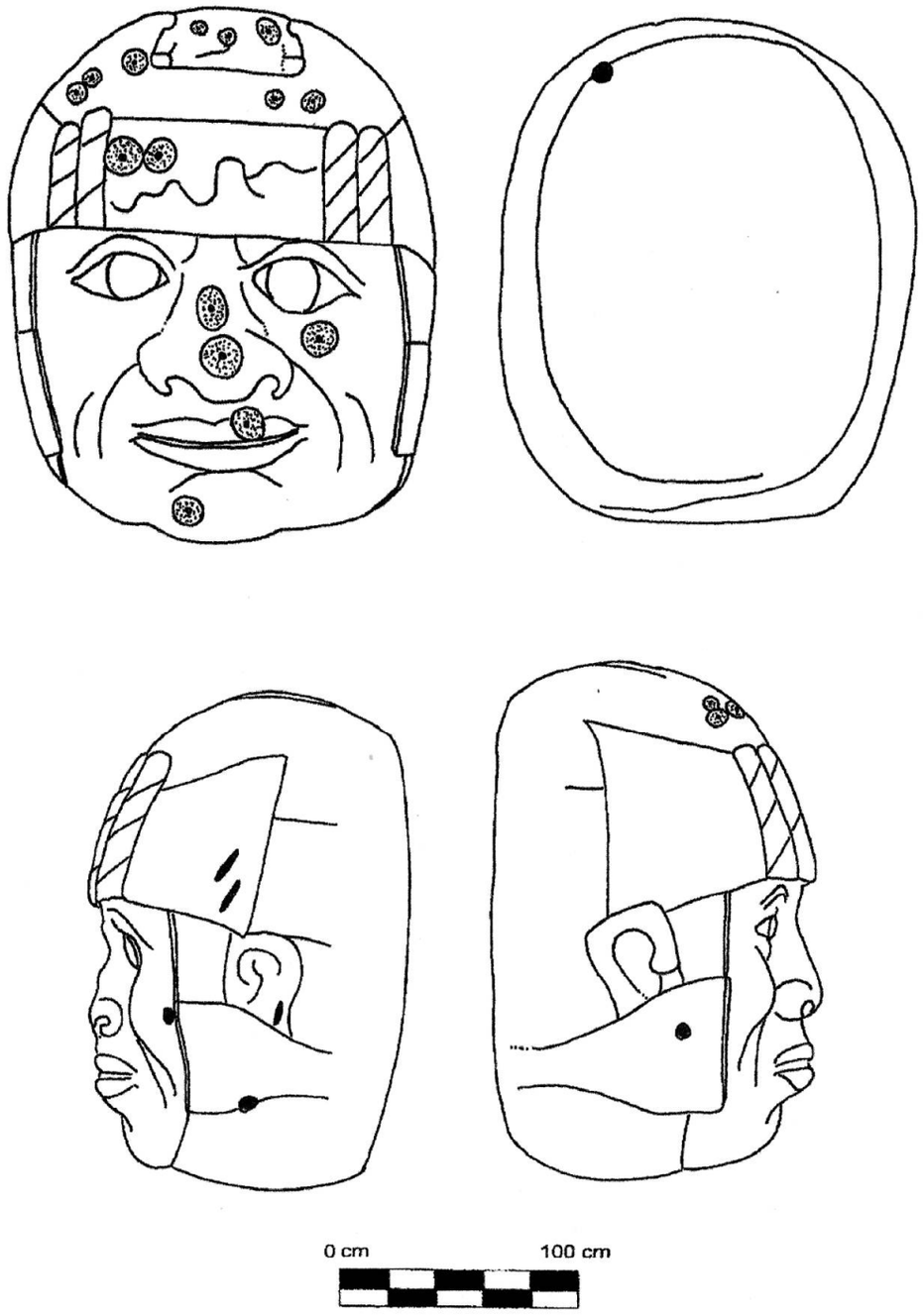


Fig. A.41 – San Lorenzo Monument 66 (Colossal Head 9) (Museum of Anthropology, Xalapa, Veracruz): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:134-135).

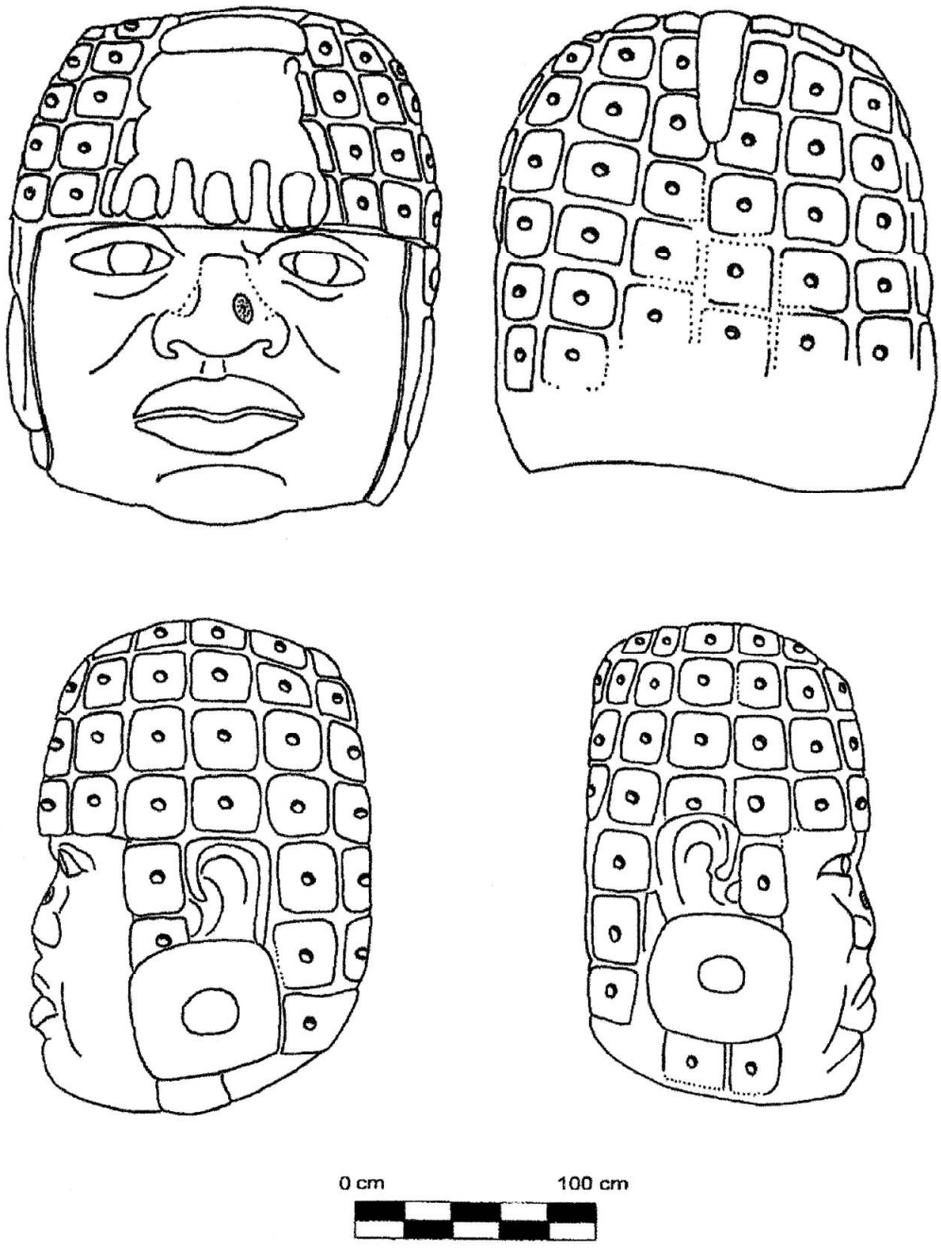


Fig. A.42 – San Lorenzo Monument 89 (Colossal Head 10) (San Lorenzo Site Museum, Tenochtitlán, Veracruz): front view (top, left); posterior view (top, right); left profile (bottom, left); and right profile (bottom, right). Drawings by the author (after Cyphers 2004:154-155).

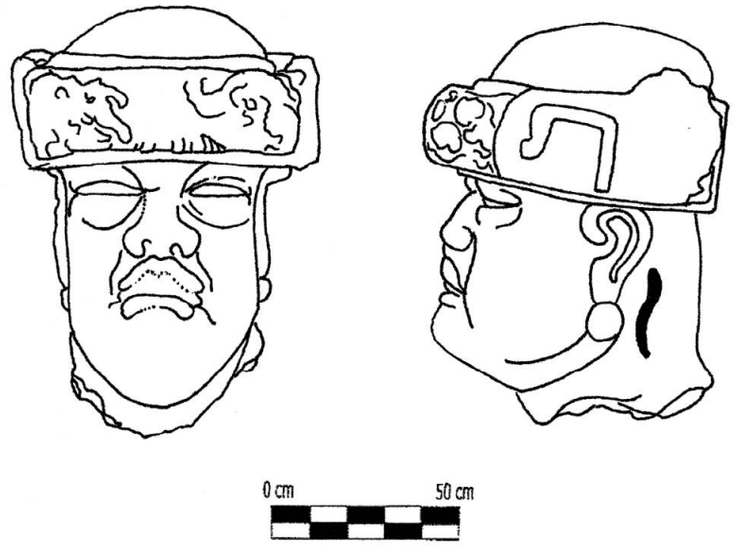


Fig. A.43 – San Lorenzo Monument 6 / Loma del Zapote Monument 12 (National Museum of Anthropology, Mexico City): front view (left) and left profile (right). Drawings by the author.

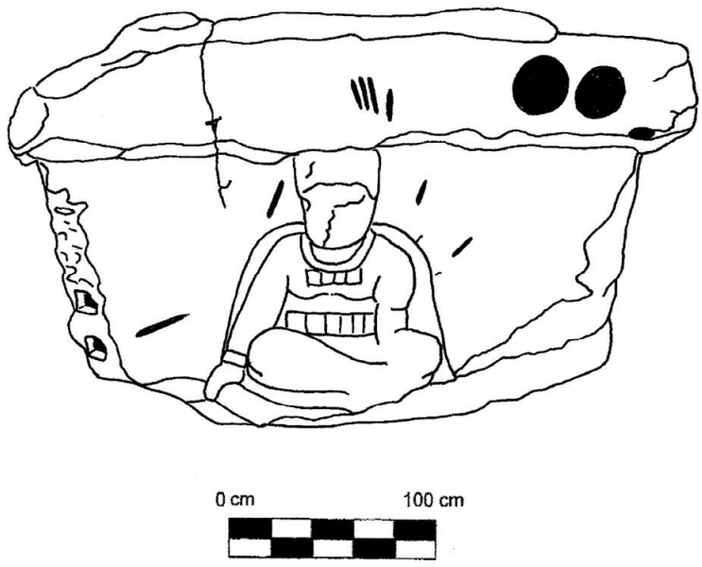


Fig. A.44 – San Lorenzo Monument 14 (Museum of Anthropology, Xalapa, Veracruz): front view (left) and left profile (right). Drawing by the author.

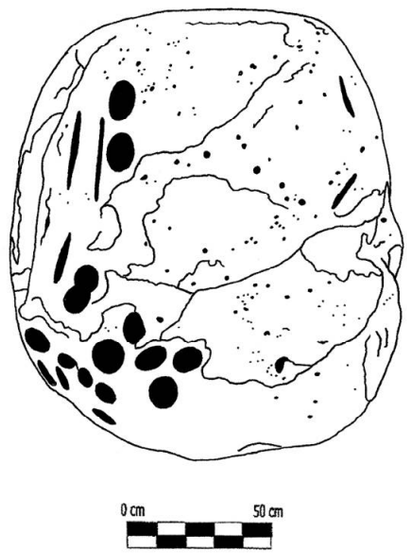


Fig. A.45 – San Lorenzo Monument 19 (San Lorenzo Archaeological Site, Texistepec, Veracruz). Drawing by the author (after Coe and Diehl 1980:329, Fig. 448).

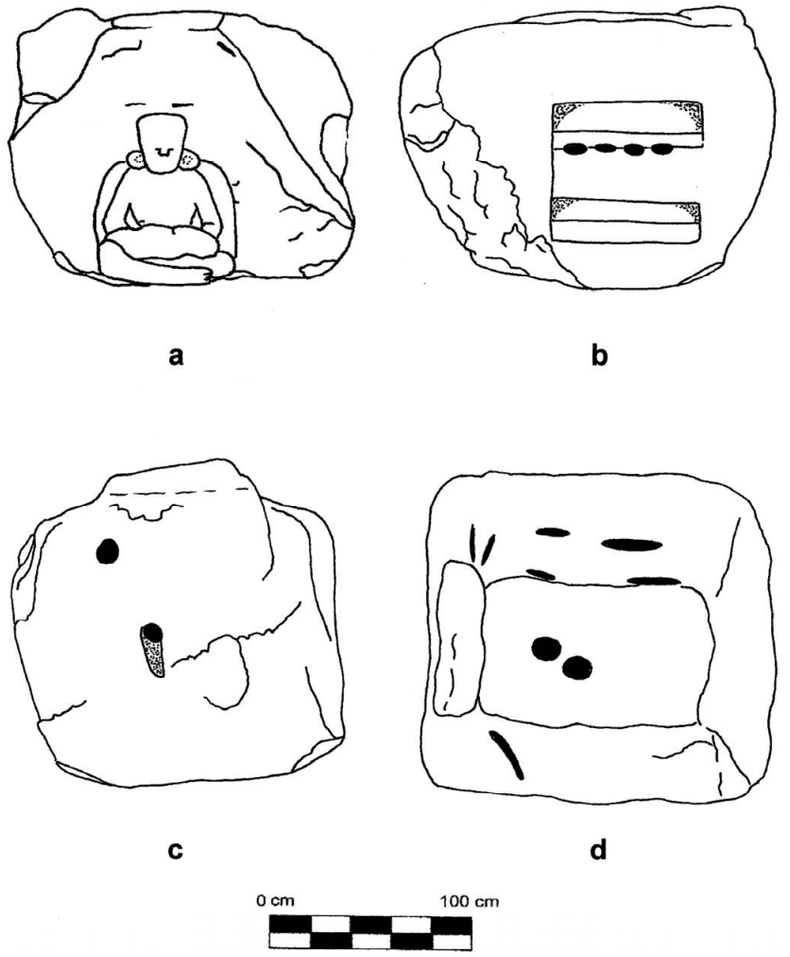


Fig. A.46 – San Lorenzo Monument 20 (San Lorenzo Site Museum, Tenochtitlán, Veracruz): (a) front view; (b) posterior view; (c) right profile; and (d) superior view. Drawings by the author.

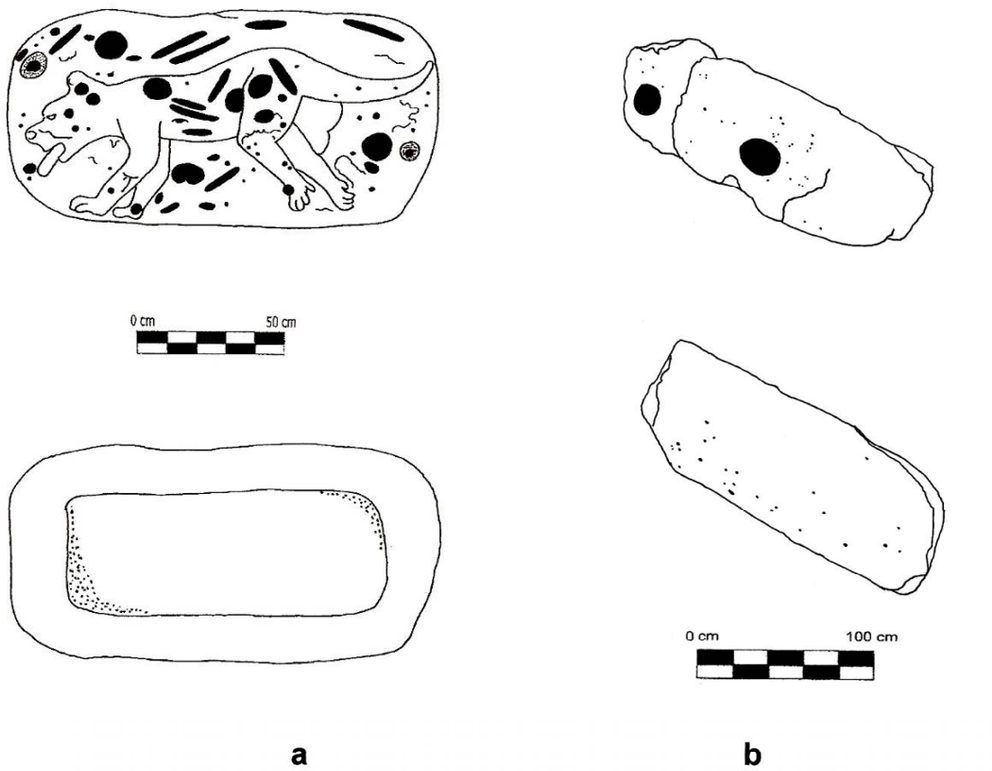


Fig. A.47 – (a) San Lorenzo Monument 21 (National Museum of Anthropology, Mexico City): front view (left) and left profile (right);(b) San Lorenzo Monument 23 (San Lorenzo Archaeological Site, Texistepec, Veracruz): front view (top) and posterior view (bottom). Drawings by the author (bottom of figure 'a' drawn after Coe and Diehl 1980:332, Fig. 453; figure 'b' after Cyphers 2004:86, Fig. 43).

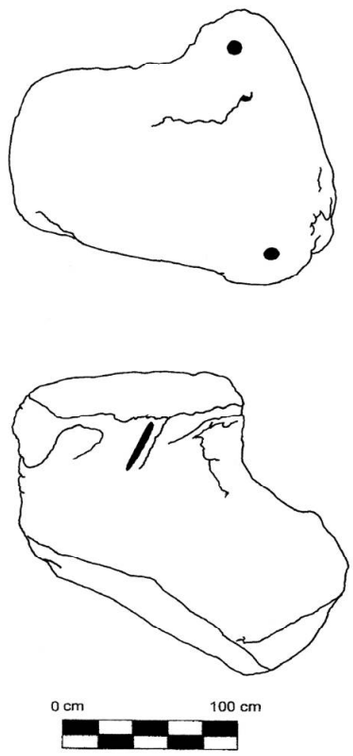


Fig. A.48 – San Lorenzo Monument 50 (San Lorenzo Archaeological Site, Texistepec, Veracruz): exterior facet (top) and interior facet (bottom). Drawings by the author (after Coe and Diehl 1980:359, Fig. 491).

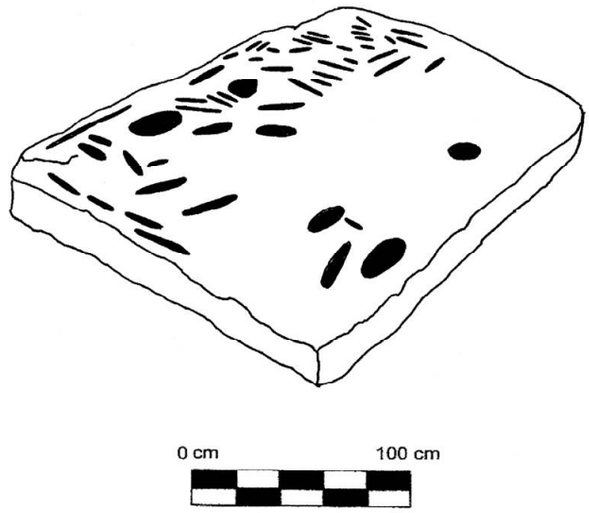


Fig. A.49 – San Lorenzo Monument 51 (San Lorenzo Archaeological Site, Veracruz).
Drawing by the author (after Coe and Diehl 1980:360, Fig.492).

Fig. A.50 – San Lorenzo Monument 63 (San Lorenzo Archaeological Site, Texistepec, Veracruz).
Drawing by the author (after Cyphers 2004:130, Fig. 76).

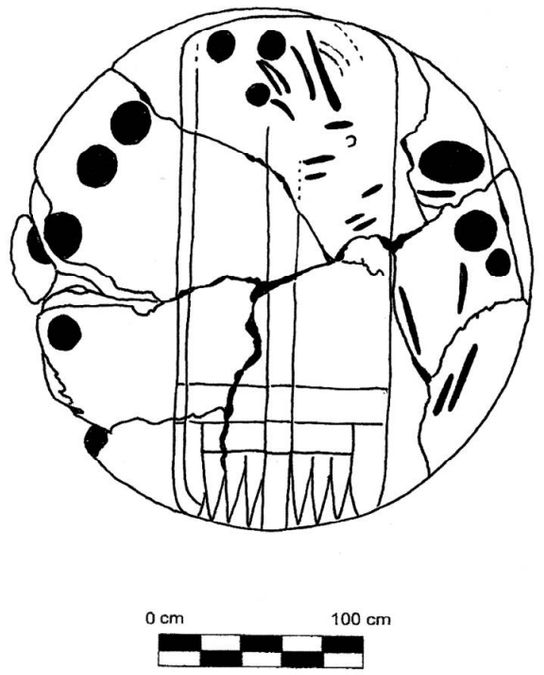


Fig. A.51 – San Lorenzo Monument 64 (San Lorenzo Archaeological Site, Texistepec, Veracruz). Drawing by the author (after Cyphers 2004:131, Fig. 77).

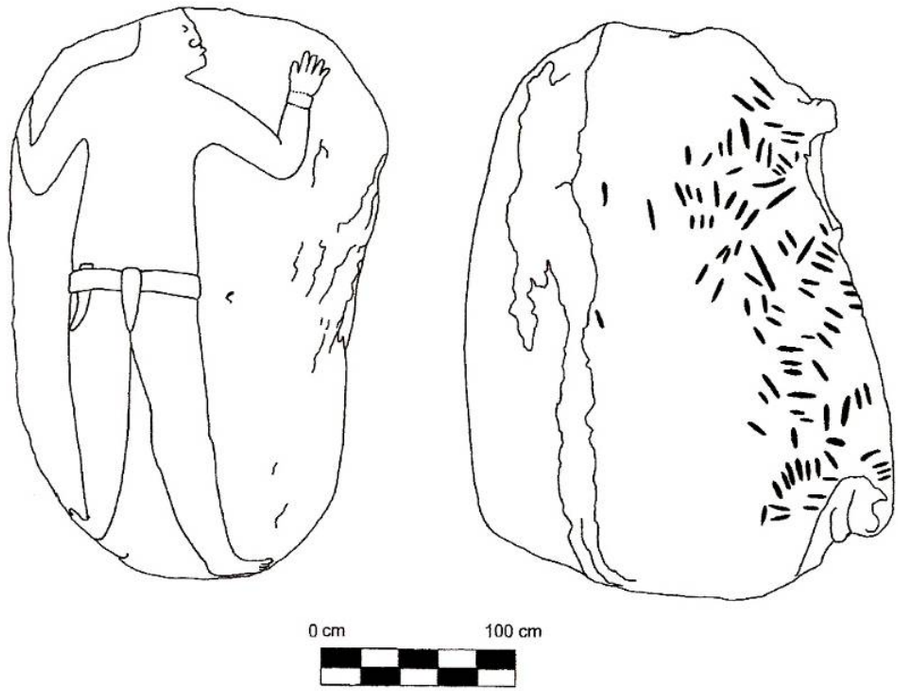


Fig. A.52 – San Lorenzo Monument 112 (San Lorenzo Site Museum, Tenochtitlán, Veracruz): front view (left) and oblique, posterior view (right). Drawings by the author (after Cyphers 2004:191, Fig. 127).

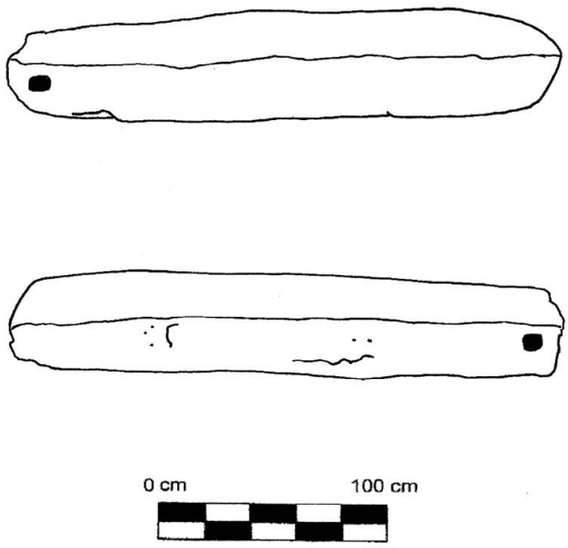


Fig. A.53 – San Lorenzo Monument 114 (Bodega of the Museum of Anthropology, Xalapa, Veracruz): front view (top) and posterior view (bottom). Drawings by the author (after Cyphers 2004:193, Fig. 129).

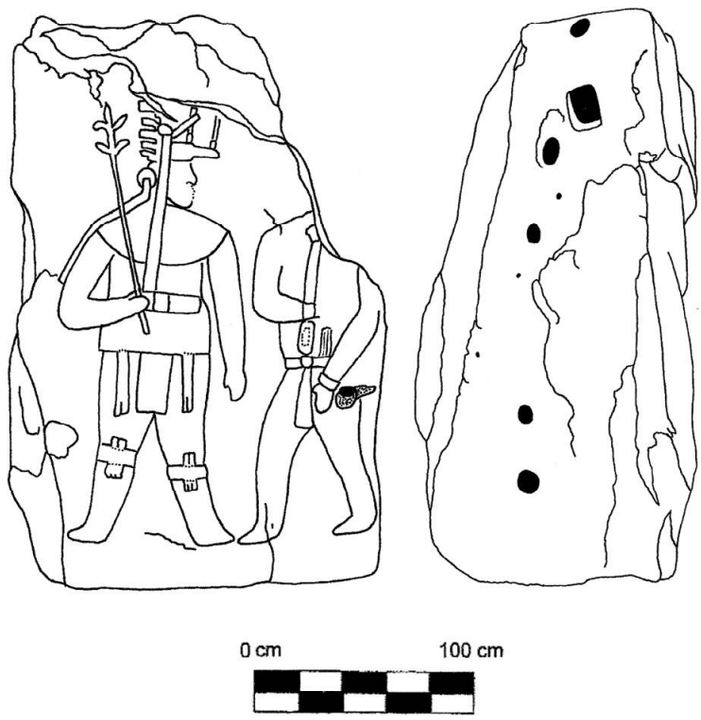


Fig. A.54 – El Viejón Monument 1 (Museum of Anthropology, Xalapa, Veracruz): front view (left) and oblique, posterior view (right). Drawings by the author.

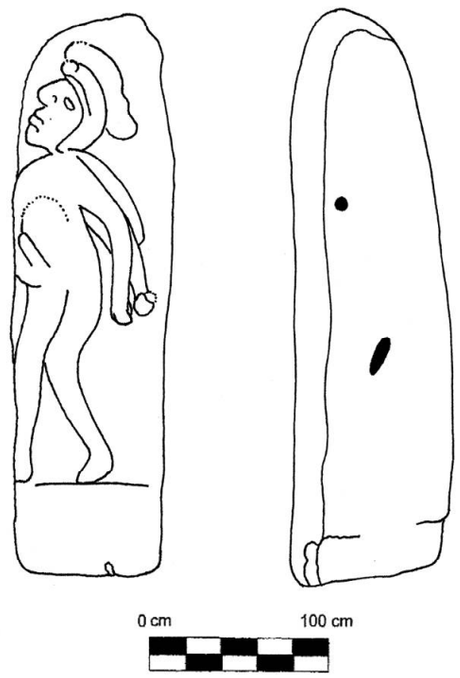


Fig. A.55 – Angel R. Cabada Monument 1 (Museum of Anthropology, Xalapa, Veracruz): front view (left) and posterior view (right). Drawings by the author.

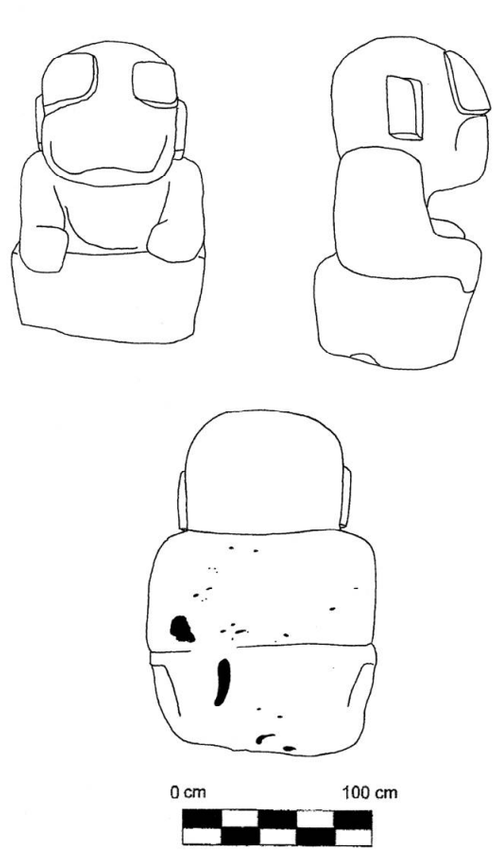


Fig. A.56 – Llano de Jicaro Monument 8 (Museum of Anthropology, Xalapa, Veracruz): front view (top, left); right profile (top, right); and posterior view (bottom). Drawings by the author.

No measurements available.

Fig. A.57 – Tres Zapotes Stela F (Tres Zapotes Museum, Tres Zapotes, Veracruz). Drawing by the author.

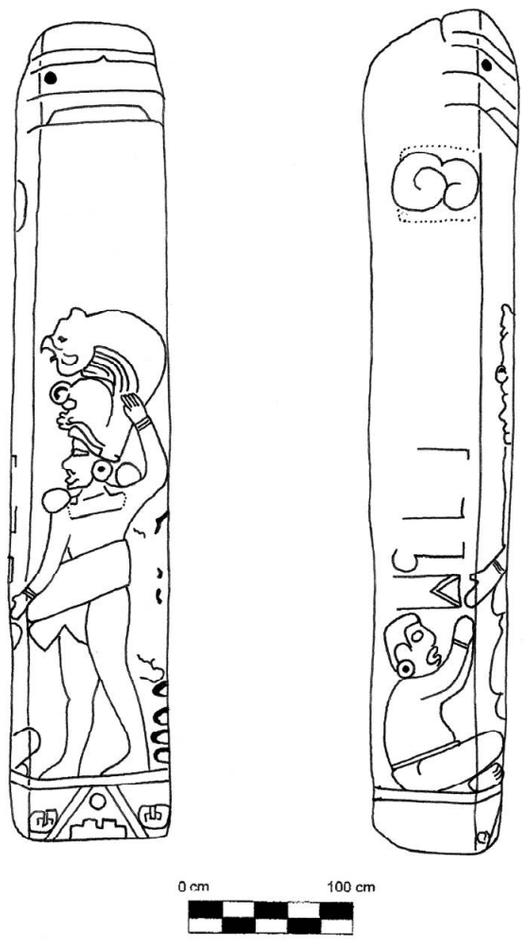


Fig. A.58 – Alvarado Stela (National Museum of Anthropology, Mexico City): front view (left) and right profile (right). Drawings by the author.

APPENDIX TWO – MATERIALS, FORMS AND TECHNICAL ATTRIBUTES OF THE MONUMENTS

Olmec-style monuments from the southern Gulf Coast lowlands with pit and groove work include a variety of materials and shapes. The following list provides a breakdown of these monuments into their respective rock media and forms. Monuments marked with an asterisk (*) have been characterized either as andesitic or basaltic in nature.

ANDESITE

Thrones

La Venta Altar 7

Stelae

El Viejón Monument 1

Undressed Stones

San Lorenzo Monument 63*

(Total 3)

BASALT

Thrones

La Venta Altar 2
La Venta Altar 4
La Venta Altar 8
San Lorenzo Monument 14
San Lorenzo Monument 20

Benches

La Venta Monument 59
La Venta Monument 67
La Venta Unnumbered Bench

Colossal Heads

La Venta Monument 1
La Venta Monument 2
La Venta Monument 3
La Venta Monument 4
La Venta Monument 68
San Lorenzo Monument 1
San Lorenzo Monument 2
San Lorenzo Monument 3
San Lorenzo Monument 4
San Lorenzo Monument 5
San Lorenzo Monument 17
San Lorenzo Monument 53*
San Lorenzo Monument 61*
San Lorenzo Monument 66
San Lorenzo Monument 89

Stelae (including plain stelae)

La Venta Stela 1
La Venta Stela 2
La Venta Stela 4
La Venta Monument 47
La Venta Monument 63
San Lorenzo Monument 23
Angel R. Cabada Monument 1
Alvarado Stela

Full-Round Sculptures

La Venta Monument 44
La Venta Monument 78
San Lorenzo Monument 6
Llano de Jicaro Monument 8

Columns (including columnar sculptures)

La Venta Monument 13
La Venta Monument 62
San Lorenzo Monument 114

Carved Basins

San Lorenzo Monument 21

Rectangular Slabs

San Lorenzo Monument 51

Carved Round or Oval Stones

San Lorenzo Monument 64
San Lorenzo Monument 112

Undressed Stones

San Lorenzo Monument 19
San Lorenzo Monument 50

(Total 44)

GREENISH SCHIST

Stelae

La Venta Monument 69

Undressed Stones

La Venta Monument 36a
La Venta Monument 36b

(Total 3)

SANDSTONE

Full-Round Sculptures

La Venta Monument 52

La Venta Monument 53

La Venta Monument 54

(Total 3)

SERPENTINE-LIKE STONE

Full-Round Sculptures

La Venta Monument 57

(Total 1)

WELDED TUFF (IGNIMBRITE)

Columns

La Venta Monument 32

(Total 1)

UNKNOWN ROCK MEDIA

Stelae

La Venta Unnumbered Monument

Tres Zapotes Stela F

Full-Round Sculptures

La Venta Monument 18

(Total 3)

There is a total of 58 Olmec-style monuments from various parts of the Gulf Coast lowlands with pit and groove work. The great majority of these carved works appear to be basaltic in nature (n = 44) with andesite (n = 3), sandstone (n =3), and schist (n =3) forming much smaller but nonetheless important media for carving Olmec-style monuments with pits and grooves.

Archaeologists have been able to trace the source of the basalt used to construct most of the monuments from San Lorenzo Tenochtitlán (e.g. Coe and Diehl 1980: 295-297; Williams and Heizer 1965). Much of this basalt comes from the slopes of Cerro Cintepec in the Tuxtla Mountains on the northern edge of the southern Gulf Coast lowlands. Of the basalt monuments with pit and groove work, 11 have been identified as using Cerro Cintepec Type A basalt. These works include most of the colossal heads (i.e. Monuments 1, 2, 3, 4, 17, and 61), a plain stela (Monument 23), a carved round stone (Monument 64), and several undressed stones (i.e. Monuments 19 and 50). Only one monument was identified as using Cerro Cintepec Type B basalt – Monument 20, a throne sculpture.

In terms of techniques of manufacture, recent experiments on rocks of similar hardness using the Mohs scale of mineral hardness (i.e. quartz, rather than basalt or andesite) (Kumar 2007 in Bednarik 2008a: 85) suggest that the hemispheric pits on Olmec-style monuments were probably not produced through the use of grinding stones or other abrasives as many archaeologists have assumed in the past (e.g. Clewlow, Cowan, O'Connell and Benemann 1967). As noted earlier in Chapter Two, it appears that most pits without dimples on these monuments were therefore created by some form of direct percussion, such as hammering. The resulting abraded appearance of the pits may be due to the pounding action crushing the rock crystals or grains in the rock media into fine dust particles (Bednarik 2008a: 86).

It is also seems unlikely that the hemispheric pits on the Olmec-style monuments were created using some means of indirect percussion, such as chiseling or pecking, because the resulting tool-wear would have produced excessive tool debris which has not been observed in the Gulf Coast lowlands. However, a review of excavation reports from San Lorenzo Tenochtitlán and La Venta does indicate that basalt mauls, hammerstones and pounding stones were used throughout the Early and Middle Formative periods (Coe and Diehl 1980: 237, 240-241; Drucker 1952: 146, Plate 44). These ground-stone artifacts could have produced the hemispheric pits on Olmec-style monuments.

Unlike the hemispheric pits, it is likely that the grooves observed on the Olmec-style monuments were produced through an abrasive technique using ground-stone tools (Clewlow, Cowan, O'Connell and Benemann 1967: 71). Possible examples of such tools include the ubiquitous greenstone and basalt celts and adzes, basalt pulidors, and quartz or sanstone polishing pebbles found in contexts dating from the San Lorenzo A through Palangana phases of the Formtive period (1150-400 BC) (Coe and Diehl 1980: 237-239).

APPENDIX THREE – CURRENT LOCATIONS OF OLMEC-STLYE MONUMENTS WITH PIT AND GROOVE WORK

The following list is offered to help researchers locate the Olmec-style monuments with pit and groove work mentioned in this report. The location of these carvings can sometimes be difficult to discern as they are circulated within museum collections, loaned to other institutions, or placed in various archaeological bodegas to protect them from damage or looting. As a result, this list should only be considered up-to-date as of 2010. It is always wise to contact the museum in question and consult the Consejo de Arqueología of the Instituto de Antropología e Historia prior to beginning any research in Mexico. In addition, a detailed inspection of previous archaeological work in the southern Gulf Coast lowlands, particularly as it pertains to so-called "monument mutilation" can be very helpful (e.g. Baudez 2012; Clewlow and Corson 1968; Clewlow, Cowan, O'Connell and Benemann 1967; Coe and Diehl 1980; Cyphers 2004; Ochoa and Castro-Leal 1987; Pohorilenko 1997; Stirling 1943, 1955) and may yet turn up further instances of pit and groove work.

LA VENTA PARK MUSEUM
(Villahermosa, Tabasco)

La Venta Altar 2
La Venta Altar 4
La Venta Altar 7
La Venta Stela 1
La Venta Stela 2
La Venta Monument 1
La Venta Monument 3
La Venta Monument 4
La Venta Monument 13
La Venta Monument 32
La Venta Monument 47
La Venta Monument 59
La Venta Monument 62
La Venta Monument 63
La Venta Monument 67
La Venta Monument 68
La Venta Monument 78
La Venta Unnumbered Monument

REGIONAL MUSEUM OF ANTHROPOLOGY, CARLOS PELLICER CÁMARA (Villahermosa, Tabasco)

La Venta Monument 2
La Venta Monument 44
La Venta Monument 69

LA VENTA SITE MUSEUM
(La Venta, Tabasco)

La Venta Altar 8
La Venta Monument 52
La Venta Monument 53
La Venta Monument 54
La Venta Unnumbered Bench

SAN LORENZO TENOCHTITLÁN ARCHAEOLOGICAL SITE
(Texistepec, Veracruz)

San Lorenzo Monument 19
San Lorenzo Monument 23
San Lorenzo Monument 50
San Lorenzo Monument 51
San Lorenzo Monument 63
San Lorenzo Monument 64
San Lorenzo Monument 114

SAN LORENZO TENOCHTITLÁN SITE MUSEUM (Tenochtitán, Veracruz)

San Lorenzo Monument 89 (Colossal Head 10)
San Lorenzo Monument 20
San Lorenzo Monument 112

TRES ZAPOTES SITE MUSEUM
(Tres Zapotes, Veracruz)

Tres Zapotes Stela F

MUSEUM OF ANTHROPOLOGY
(Xalapa, Veracruz)

San Lorenzo Monument 1 (Colossal Head 1)
San Lorenzo Monument 3 (Colossal Head 3)
San Lorenzo Monument 4 (Colossal Head 4)
San Lorenzo Monument 5 (Colossal Head 5)
San Lorenzo Monument 53 (Colossal Head 7)
San Lorenzo Monument 61 (Colossal Head 8)
San Lorenzo Monument 66 (Colossal Head 9)
San Lorenzo Monument 6
San Lorenzo Monument 14
El Viejón Monument 1
Angel R. Cabada Monument 1
Llano de Jicaro Monument 8

NATIONAL MUSEUM OF ANTHROPOLOGY (Mexico City)

San Lorenzo Monument 2 (Colossal Head 2)
San Lorenzo Monument 17 (Colossal Head 6)
San Lorenzo Monument 21
Alvarado Stela

CURRENT LOCATION UNKNOWN

La Venta Stela 4
La Venta Monument 18
La Venta Monument 36a
La Venta Monument 36b
La Venta Monument 57

REFERENCES CITED

Acosta Lagunes, Agustín
1992 Nacimiento de un museo. In *Museo de Antropología de Xalapa*, edited by Beatrice Trueblood, pp. 18-31. Gobierno del Estado de Veracruz, Xalapa, Veracruz.

Agogino, George A.
1994 Five Olmec Studies. *Chesopiean* 32(3-4): 1-9.

Anonymous
1950 The 'King' – The Largest Stone Head Found in the Western Hemisphere. *Natural History* 59: 283.

Arnold, Philip J., III
2000 Sociopolitical Complexity and the Gulf Olmecs: A View from the Tuxtla Mountains. In *Olmec Art and Archaeology in Mesoamerica*, edited by John Clark and Mary Pye, pp. 117-135. Studies in the History of Art, Volume 58. Yale University Press, New Haven, Connecticut.

2005 The Shark Monster in Olmec Iconography. *Mesoamerican Voices* 2: 1-38.

Athy, Lawrence F.
1993 Proto-Ogams on Olmec Monuments. *Epigraphic Society Occasional Papers* 22 (1): 136-142.

Aveleyra Arroyo de Anda, Luis
1965 Una nueva cabeza colossal olmeca. *Boletín del Instituto Nacional de Antropología e Historia* 20: 12-14. Mexico.

Aveni, Anthony F., Horst Hartung and Beth Buckingham
1978 The Pecked Cross Symbol in Ancient Mesoamerica. *Science* 202: 267-279. New York.

Ayala Falcón, Maricela
2010 Bultos sagrados de los ancestros entre los Mayas. *Arqueología Mexicana* 18 (106): 34-40. Editorial Raíces, México.

Batres, Leopoldo
1905 *La lápida arqueológica de Tepatlaxco-Orizaba*. Tipografía de Fidencio Soria, México.

Baudez, Claude-François
2012 Beauty and Ugliness in Olmec Monumental Sculoture. *Journal de la Société des Américanistes* 98 (2): 7-31. Paris.

Bednarik, Robert G.
1993 About Cupules. *Rock Art Research* 10 (2): 138-139.

2008a Cupules. *Rock Art Research* 25 (2): 61-100.

2008b On Cupule Interpretation. *Rock Art Research* 25 (2): 214-221.

Benson, Elizabeth P.
1976 Motifs in Olmec Sculpture. *Actas del XXIII Congreso Internacional de Historia de Arte: España entre el Mediterraneo y el Atlantico (Granada, Spain)* 1: 65-80.

1996 History of Olmec Investigation. In *Olmec Art of Ancient Mexico*, edited by Elizabeth P. Benson and Beatriz de la Fuente, pp. 17-28. National Gallery of Art, Washington, D.C.

Benson, Elizabeth P. and Beatriz de la Fuente (eds.)
1996 *Olmec Art of Ancient Mexico*. National Gallery of Art, Washington, D.C.

Bernal, Ignacio
1969 *The Olmec World*. Translated by Doris Heyden and Fernando Horcasitas. University of California Press, Berkeley, California.

1979 *Great Sculptures of Ancient Mexico*. Reynal and Company, New York.

Berrin, Kathleen and Esther Pasztory (eds.)
1994 *Teotihuacan: Art from the City of the Gods*. Thames and Hudson, Fine Arts Museums of San Francisco, New York.

Berrin, Kathleen and Virginia M. Fields (eds.)
2010 *Olmec: Colossal Masterworks of Ancient Mexico*. Fine Arts Museums of San Francisco/Los Angeles County Museum of Art/Yale University Press, New Haven, Connecticut.

Beverido Pereau, Francisco
1996 *Estética olmeca*. Universidad Veracruzana, Xalapa, Veracruz.

Beyer, Hermann
1927 Nota bibliográfica sobre "Tribes and Temples." *El México Antiguo* 2: 305-312. México.

Blom, Frans and Oliver La Farge
1926-1927 *Tribes and Temples*. 2 Volumes. Middle American Research Series, Publication No. 1, Tulane University, Middle American Research Institute, New Orleans, Louisiana.

Blomster, Jeffrey
2002 What and Where is Olmec Style? Regional Perspectives on Hollow Figurines in Early Formative America. *Ancient Mesoamerica* 13 (2): 171-195. Cambridge University Press.

Bonifaz Nuño, Rubén
1993 Michael D. Coe y los olmecas. *Antropológicas* 8: 63-73. Universidad Nacional Autónoma de México, México.

1996 *Hombres y serpientes: Iconografía olmeca*. Universidad Nacional Autónoma de Mexico, México.

Borstein, Joshua A.
2001 Tripping Over Colossal Heads: Settlement Patterns and Population Development in the Upland Olmec Heartland. Unpublished Ph.D. dissertation. Department of Anthropology, Pennsylvania State University, University Park, Pennsylvania.

Bove, Frederick J.
1978 Laguna de los Cerros: An Olmec Central Place. *Journal of New World Archaeology* 2: 1-56.

Breiner, Sheldon and Michael D. Coe
1972 Magnetic Exploration of the Olmec Civilization. *American Scientist* 60 (5): 566-575.

Brüggemann, Jürgen and Marie-Areti Hers
1970 Exploraciones arqueológicas en San Lorenzo Tenochtitlán. *Boletín del Instituto Nacional de Antropología e Historia* 39: 19-23. México.

Castro-Leal, Marcia
1998 La significación del inframundo olmeca en el altar 4 de La Venta, Tabasco. *Dimensión Antropológica* 5 (14): 149-164.

2004 *Gulf Coast, National Museum of Anthropology, Mexico*. Instituto Nacional de Antropología e Historia / Lunwerg Editores, México.

Cervantes, María Antonieta
1973 *Lapidaria olmeca/Olmec Lapidary Art*. Museo Nacional de Antropología, México.

1976 La estela de Alvarado. *Actas del XLI Congreso Internacional de Americanistas, 1974*, pp. 309-322. Instituto Nacional de Antropología e Historia, México.

Chemin-Bässler, Heidi
1975 Análisis de la pequeña escultura olmeca. *Reuniones de Mesa Redonda (13th Session)* 1: 283-292. Sociedad Mexicana de Antropología, México.

Clark, John E.
1997 The Arts of Government in Early Mesoamerica. *Annual Review of Anthropology* 26:211-234.

2001 Ciudades tempranas Olmecas. In *Reconstruyendo la ciudad Maya: el urbanismo en las sociedades antiguas*, edited by Andrés C. Ruiz, Ma. I. Ponce de León, and Ma. Martínez Martínez, pp. 183-210. Sociedad Española de Estudios Mayas, Madrid.

Clark, John E. and Mary E. Pye
2000 The Pacific Coast and the Olmec Question. In *Olmec Art and Archaeology in Mesoamerica*, edited by John Clark and Mary Pye, pp. 216-251. Studies in the History of Art, Volume 58. Yale University Press, New Haven, Connecticut.

Clark, John E., Julia Guernsey and Barbara Arroyo
2010 Stone Monuments and Preclassic Civilization. In *The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition*, edited by Julia Guernsey, John E. Clark and Barbara Arroyo, pp. 1-26. Dumbarton Oaks/Trustees for Harvard University, Washington D.C.

Clewlow, C. William
1968 Comparación de dos extraordinarios monumentos olmecas. *Boletín del Instituto Nacional de Antropología e Historia* 34: 37-41.

1974 *A Stylistic and Chronological Study of Olmec Monumental Sculpture*. Contributions of the University of California Archaeological Research Facility, No. 19. University of California, Berkeley, Department of Anthropology, Berkeley, California.

Clewlow, C. William and Christopher R. Corson
1968 New Stone Monuments from La Venta, 1968. In *Papers on Mesoamerican Archaeology*, pp. 171-203. Contributions of the University of California Archaeological Research Facility, No. 5. University of California, Department of Anthropology, Berkeley, California.

Clewlow, C. William, Richard A. Cowan, James F. O'Connell and Carlos Benemann
1967 *Colossal Heads of the Olmec Culture*. Contributions of the University of California Archaeological Research Facility, No. 4. University of California, Department of Anthropology, Berkeley, California.

Coe, Michael D.
1965a Archaeological Synthesis of Southern Veracruz and Tabasco. In *Handbook of Middle American Indians Volume 3 - Archaeology of Southern Mesoamerica, Part 2*, edited by Gordon R. Willey, pp. 679-715. University of Texas Press, Austin, Texas.

1965b The Olmec Style and Its Distribution. In *Handbook of Middle American Indians Volume 3 - Archaeology of Southern Mesoamerica, Part 2*, edited by Gordon R. Willey, pp. 739-775. University of Texas Press, Austin, Texas.

1966 Exploraciones Arqueológicas en San Lorenzo Tenochtitlán, Veracruz. *Boletín del Instituto Nacional de Antropología e Historia* 24: 21-25. México.

1968a *America's First Civilization*. American Heritage, New York.

1968b San Lorenzo and the Olmec Civilization. In *Dumbarton Oaks Conference on the Olmec (October 28th and 29th, 1967)*, edited by Elizabeth P. Benson, pp. 41-78. Dumbarton Oaks Research Library and Collection, Washington D.C.

1973 Iconology of Olmec Art. In *The Iconography of Middle American Sculpture*. pp. 1-12. Metropolitan Museum of Art, New York.

1989 The Olmec Heartland: Evolution of Ideology. In *Regional Perspectives on the Olmec*, edited by Robert J. Sharer and David C. Grove, pp. 68-82. Cambridge University Press/School of American Research, New York.

1992 Los olmecas. In *Museo de Antropología de Xalapa*, edited by Beatrice Trueblood, pp. 32-75. Gobierno del Estado de Veracruz, Xalapa, Veracruz.

Coe, Michael D. and Richard A. Diehl
1980 *In the Land of the Olmec*. Volume I. University of Texas Press, Austin, Texas.

Coe, Michael D. and Louis A. Fernandez
1980 Appendix 2: Petrographic Analysis of Rock Samples from San Lorenzo. In *In the Land of the Olmec*. Volume I, pp. 397-404. University of Texas Press, Austin, Texas.

Coe, Michael D., Dean R. Snow and Elizabeth P. Benson
1986 *Atlas of Ancient America*. Facts on File, New York.

Coe, William R.
1959 *Piedras Negras Archaeology: Artifacts, Caches, and Burials*. Museum Monographs. The University Museum, University of Pennsylvania, Philadelphia.

Covarrubias, Miguel
1944 La Venta, Colossal Heads and Jaguar Gods. *Dyn* 6: 24-33.

1946 *Mexico South: The Isthmus of Tehuantepec*. Alfred A. Knopf, New York.

1957 *Indian art of Mexico and Central America*. Alfred A. Knopf, New York.

Cyphers G., Ann
1992 Escenas escultóricas olmecas. *Antropológicas* 6: 47-52. Universidad Nacional Autónoma de México, México.

1994a La nueva cabeza colosal de San Lorenzo. *Antropológicas* 11: 66-72. Universidad Nacional Autónoma de México, México.

1994b San Lorenzo Tenochtitlán. In *Los olmecas en Mesoamérica*, edited by John E. Clark, pp. 43-68. Citibank, México.

1995a Las cabezas colosales. *Arqueología Mexicana* 2 (12): 43-47. Editorial Raíces, México.

1995b *Descifrando los misterios de la cultura olmeca*. Universidad Nacional Autónoma de Mexico, México.

1996 Reconstructing Olmec Life at San Lorenzo. In *Olmec Art of Ancient Mexico*, edited by Elizabeth P. Benson and Beatriz de la Fuente, pp. 61-71. National Gallery of Art / Harry N. Abrams, Inc., Washington D.C.

1997a La architectura olmeca en San Lorenzo Tenochtitlán. In *Población, Subsistencia y Medio Ambiente en San Lorenzo Tenochtitlán*, edited by Ann Cyphers, pp. 91-117. Universidad Nacional Autónoma de Mexico, México.

1997b El contexto social de monumentos en San Lorenzo. In *Población, Subsistencia y Medio Ambiente en San Lorenzo Tenochtitlán*, edited by Ann Cyphers, pp. 163-194. Universidad Nacional Autónoma de Mexico, México.

1997c La gobernatura en San Lorenzo: Inferencias del arte y patron de asentamiento. In *Población, Subsistencia y Medio Ambiente en San Lorenzo Tenochtitlán*, edited by Ann Cyphers, pp. 227-252. Universidad Nacional Autónoma de Mexico, México.

1999 From Stone to Symbols: Olmec Art in Social Context at San Lorenzo Tenochtitlán. In *Social Patterns in Pre-Classic Mesoamerica*, edited by David C. Grove and Rosemary A. Joyce, pp. 155-181. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

2004 *Escultura olmeca de San Lorenzo Tenochtitlán*. Universidad Nacional Autónoma de Mexico, México.

2007 Surgimiento y decadencia de San Lorenzo, Veracruz. *Arqueología Mexicana* 15 (87): 36-42. Editorial Raíces, México.

2010 San Lorenzo. In *Olmec: Colossal Masterworks of Ancient Mexico*, edited by Kathleen Berrin and Virginia M. Fields, pp. 34-43. Fine Arts Museums of San Francisco/Los Angeles County Museum of Art/Yale University Press, New Haven, Connecticut.

Cyphers, Ann and Judith Zurita-Noguera
2006 A Land That Tastes of Water. In *Precolumbian Water Management: Ideology, Ritual, and Power*, edited by Lisa J. Lucero and Barbara W. Fash, pp. 33-50. University of Arizona Press, Tucson, Arizona.

Cyphers, Ann, Alejandro Hernandez-Portilla, Marisol Varela-Gomez and Lilia Gregor-Lopez
2006 Cosmological and Sociopolitical Synergy in Preclassic Architectural Complexes. In *Precolumbian Water Management: Ideology, Ritual, and Power*, edited by Lisa J. Lucero and Barbara W. Fash, pp.17-32. University of Arizona Press, Tucson, Arizona.

De la Fuente, Beatriz
1972 La escultura monumental. *Artes de Mexico* (El arte olmeca) 154: 6-34. México.

1973 *Escultura monumental olmeca: Catálago*. Instituto de Investigaciones Estéticas, Universidad Nacional Autónoma de Mexico, México.

1976 Sobre una escultura recientemente encontrada en La Venta, Tabasco. *Anales del Instituto de Investigaciones Estéticas* 45: 31-43. Universidad Nacional Autónoma de Mexico, México.

1977 *Los hombres de la piedra: Escultura olmeca*. Universidad Nacional Autónoma de Mexico, México.

1981 Toward a Conception of Monumental Olmec Art. In *The Olmec and Their Neighbors: Essays in Honor of Matthew W. Stirling*, edited by Elizabeth P. Benson, pp. 83-94. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

1983 Figura humana olmeca de jade. *Anales del Instituto de Investigaciones Esteticas* 13 (52): 7-19. Universidad Nacional Autónoma de Mexico, México.

1987 Tres cabezas colosales olmecas procedentes de San Lorenzo Tenochtitlán, en el nuevo Museo de Antropología de Xalapa. *Anales del Instituto de Investigaciones Esteticas* 15 (58): 13-28. Universidad Nacional Autónoma de Mexico, México.

1991 Sobre las tres cabezas colosales olmecas procedientes de San Lorenzo Tenochtitlán, en el Nuevo Museo de Antropología de Xalapa. *Cuadernos de Arquitectura Mesoamericana* 12: 69-74. Universidad Nacional Autónoma de Mexico, México.

1992 *Cabezas colosales olmecas*. El Colegio Nacional, México.

1994 Arte monumental olmeca. In *Los olmecas en Mesoamérica*, edited by John E. Clark, pp. 203-221. Citibank, México.

1995 El arte olmeca: Del concepto de estilo. *Arqueología Mexicana* 2 (12): 18-25. Editorial Raíces, México.

1996 Olmec Art. *Arqueología Mexicana* (Special Issue: The Olmecs) 4(19): 28-37. Editorial Raíces, México.

2001 Historia de la arqueología olmeca. In *Descubridores del pasado en Mesoamérica*, edited by Eduardo Matos Moctezuma, pp. 55-80. Océano, México.

2004 Head Number 8 from San Lorenzo: An Example of Olmec Humanism. *Arts & Cultures* 5: 115-125.

Di Castro, Anna and Ann Cyphers
2006 Iconografía de la cerámica olmeca. *Anales del Instituto de Investigaciones Estéticas* 89: 29-58. Universidad Nacional Autónoma de Mexico, México.

Diehl, Richard A.
1989 Olmec Archaeology: What We Know and What We Wish We Knew. In *Regional Perspectives on the Olmec*, edited by Robert J. Sharer and David C. Grove, pp. 17-32. Cambridge University Press/School of American Research, New York.

1996 The Olmec World. In *Olmec Art of Ancient Mexico*, edited by Elizabeth P. Benson and Beatriz de la Fuente, pp. 29-34. National Gallery of Art, Washington, D.C.

2004 *The Olmecs: America's First Civilization*. Thames and Hudson, New York.

Diehl, Richard A. and Michael D. Coe
1995 Olmec Archaeology. In *The Olmec World: Ritual and Rulership*, pp. 10-25. The Art Museum, Princeton University, Princeton, New Jersey.

Doering, Travis F., and Lori D. Collins
2010 Revisiting Kaminaljuyú Monument 65 in Three-Dimensional High Definition. In *The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition*, edited by Julia Guernsey, John E. Clark and Barbara Arroyo, pp. 259-282. Dumbarton Oaks/Trustees for Harvard University, Washington D.C.

Drucker, Philip
1952 *La Venta, Tabasco: A Study of Olmec Ceramics and Art*. Bureau of American Ethnology, Bulletin 153. Smithsonian Institution, Washington D.C.

Drucker, Philip, Robert F. Heizer and Robert J. Squier
1959 *Excavations at La Venta, Tabasco, 1955*. Bureau of American Ethnology, Bulletin 170. Smithsonian Institution, Washington D.C.

Dubón, Jorge
1972 Monolithe de Angel R. Cabada (No. 23). In *L'Art Olmèque: Source des Arts Classiques du Mexique*. Musée Rodin, Paris.

Easby, Elizabeth Kennedy and John F. Scott
1970 *Before Cortés: Sculpture of Middle America*. The Metropolitan Museum of Art, New York.

Evans-Pritchard, E. E.
1948 *The Divine Kingship of the Shilluk of the Nilotic Sudan*. Cambridge University Press, Cambridge, England.

Fahsen, Federico
2010 Preclassic Stone Sculpture in the Guatemalan Highlands. In *The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition*, edited by Julia Guernsey, John E. Clark and Barbara Arroyo, pp. 231-258. Dumbarton Oaks/Trustees for Harvard University, Washington D.C.

Freidel, David A.
1986 The Monumental Architecture. In *Archaeology of Cerros, Belize, Central America, Volume 1: An Interim Report*, edited by D.A. Freidel and R.A. Robertson, pp. 1-22. Southern Methodist University, Dallas, Texas.

Freidel, David A., and Linda Schele
1989 Dead Kings and Living Temples: Dedication and Termination Rituals among the Ancient Maya. In *Word and Image in Maya Culture: Explorations in Language, Writing, and Representation*, edited by William F. Hanks and Don S. Rice, pp. 233-243. University of Utah Press, Salt Lake City, Utah.

Gallegos Gómora, M. Judith
1990 Excavaciones en la estructura D-7 en La Venta, Tabasco. *Arqueología* 3: 17-24. Instituto Nacional de Antropología e Historia, México.

García-Gallo, Alfonso
2008 La escritura olmeca y la hipótesis del mixe-zoque. In *Olmeca: Balance y perspectivas*, edited by María Teresa Uriarte and Rebecca B. González Lauck, pp.607-626. Memoria de la Primera Mesa Redonda, Tomo II. Universidad Nacional Autónoma de Mexico, México.

Gay, Carlo
1971 Paleolithic and Megalithic Traits in the Olmec Tradition of Mexico. *Almogaren* 2: 67-81. Institutum Canarium, Wien, Austria.

1972 *Chalcacingo*. International Scholarly Book Services, Portland, Oregon.

1973 Olmec Hieroglyphic Writing. *Archaeology* 26 (4): 278-288.

Gillespie, Susan D.
1994 Llano de Jicaro: An Olmec Monument Workshop. *Ancient Mesoamerica* 5: 231-242. Cambridge University Press.

1996 Llano de Jicaro: Un taller de monumentos olmecas. *Arqueología* 16: 29-42. Instituto Nacional de Antropología e Historia, México.

1999 Olmec Thrones as Ancestral Altars: The Two Sides of Power. *In Material Symbols: Culture and Economy in Prehistory*, edited by John E. Robb, pp. 224-253. Occasional Paper, No. 26. Southern Illinois University Press, Center for Archaeological Investigations, Carbondale, Illinois.

2000 The Monuments of Laguna de los Cerros and Its hinterland. In *Olmec Art and Archaeology in Mesoamerica*, edited by John Clark and Mary Pye, pp. 95-115. Studies in the History of Art, Volume 58. Yale University Press, New Haven, Connecticut.

González Calderón, Luis
1977 *Cabecitas Olmecas: Origenes de la primera civilizacion de America*. Ediciones Culturales Mexicanas, México.

González Lauck, Rebecca B.
1988 Proyecto arqueológico La Venta. *Arqueología* 1 (4): 121-165. Instituto Nacional de Antropología e Historia, México.

1994 La antigua ciudad olmeca en La Venta, Tabasco. In *Los olmecas en Mesoamérica*, edited by John E. Clark, pp. 93-112. Citibank, México.

1995 La Venta: Una grande ciudad olmeca. *Arqueología Mexicana* 2 (12): 38-42. Editorial Raices, México.

1996 La Venta: An Olmec Capital. In *Olmec Art of Ancient Mexico*, edited by Elizabeth P. Benson and Beatriz de la Fuente, pp. 73-81. National Gallery of Art / Harry N. Abrams, Inc., Washington D.C.

1997 Acerca de pirámides de tierra y seres sobrenaturales: Observaciones preliminares en torno al edificio C-1, La Venta, Tabasco. *Arqueología* 17: 79-97. Instituto Nacional de Antropología e Historia, México.

2004 Observaciones en torno a los contextos de la escultura olmeca en La Venta, Tabasco. In *Acercarse y mirar: Homenaje a Beatriz de la Fuente*, edited by Maria Teresa Uriarte and Leticia Staines Cicero, pp. 75-106. Universidad Nacional Autonoma de Mexico, México.

2007 El Complejo A: La Venta, Tabasco. *Arqueología Mexicana* 15 (87): 49-54. Editorial Raices, México.

2010 The Architectural Setting of Olmec Sculpture Clusters at La Venta, Tabasco. In *The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition*, edited by Julia Guernsey, John E. Clark, and Barbara Arroyo, pp. 129-148. Dumbarton Oaks/Trustees for Harvard University, Washington D.C.

Graham, Ian, and Peter Matthews
1996 *Corpus of Maya Hieroglyphic Inscriptions, Volume 6, Part 2: Tonina*. Harvard University Press, Cambridge, Massachusetts.

Grieder, Terence
1982 *Origins of Pre-Columbian Art*. University of Texas Press, Austin, Texas.

Grove, David C.
1973 Olmec Altars and Myths. *Archaeology* 26 (2): 128-135.

1981 Olmec Monuments: Mutilation as a Clue to Meaning. In *The Olmec and Their Neighbors: Essays in Honor of Matthew W. Stirling*, edited by Elizabeth P. Benson, pp. 48-68. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

1987 Miscellaneous Bedrock and Boulder Carvings. In *Ancient Chalcatzingo*, edited by David C. Grove, pp. 159-170. University of Texas Press, Austin, Texas.

1999 Public Monuments and Sacred Mountains: Observations on Three Formative Period Sacred Landscapes. In *Social Patterns in Pre-Classic Mesoamerica*, edited by David C. Grove and Rosemary A. Joyce, pp. 255-299. Dumbarton Oaks Research Library and Collection, Washington, D.C.

Grove, David C. and Susan D. Gillespie
1984 Chalcatzingo's Portrait Figurines and the Cult of the Ruler. *Archaeology* 37 (4): 27-33.

Grove, David C., Ponciano Ortíz Ceballos and Michael Hayton
1993 Five Olmec Monuments from the Laguna de los Cerros Hinterland. *Mexicon* 15 (5): 91-55.

Gruener, James C.
1987 *The Olmec Riddle*. Vengreen Publications, Rancho Santa Fe, California.

Guerard, Claire
1994 Mana et Pouvoir dans les Sociétés à Hiérarchie de Grades (Vanuatu). *Archives de Sciences Sociales et de Religion* 39 (85): 153-175.

Guernsey, Julia
2010 Rulers, Gods, and Potbellies: A Consideration of Sculptural Forms and Themes from the Preclassic Pacific Coast and Piedmont of Mesoamerica. In *The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition*, edited by Julia Guernsey, John E. Clark and Barbara Arroyo, pp. 207-230. Dumbarton Oaks/Trustees for Harvard University, Washington D.C.

Hendon, Julia A.
2007 Memory, Materiality, and Practice: House Societies in Southeastern Mesoamerica. In *The Durable House: House Society Models in Archaeology*, edited by Robin A. Beck, Jr., pp. 292-316. Occasional Paper, No. 35. Center for Archaeological Investigations, Carbondale, Illinois.

Heizer, Robert F.
1960 Agriculture and the Theocratic State in Lowland Southeastern Mexico. *American Antiquity* 26(2): 215-222.

1967 Analysis of Two Low Relief Sculptures from La Venta. In *Studies in Olmec Archaeology*. pp. 25-56. Contributions of the University of California Archaeological Research Facility, N° 3. University of California, Department of Anthropology, Berkeley, California.

Heizer, Robert F., Philip Drucker, and John A. Graham
1968 Investigations at La Venta, 1967. In *Papers on Mesoamerican Archaeology*, pp. 1-33. Contributions of the University of California Archaeological Research Facility, N° 5. University of California, Department of Anthropology, Berkeley, California.

Hocart, A.M.
1914 Mana. *Man* 14: 97-101.

Hogbin, Ian
1936 Mana. *Man* 36: 50

Houston, Stephen
2004 Writing in Early Mesoamerica. In *The First Writing: Script Invention as History and Process*, Edited by Stephen Houston, pp. 274-309. Cambridge University Press, New York.

Jaime-Riverón, Olaf
2010 Olmec Greenstone in Early Formative Mesoamerica. *Ancient Mesoamerica* 21: 123-133. Cambridge University Press.

Jarquin Pacheco, Ana María and Enrique Martínez Vargas
1982a Una escultura tardía teotihuacana. *In Memoria del Proyecto Arqueológico Teotihuacan 80-82. Primeros resultados,* edited by. R. Cabrera, I. Rodríguez, and N. Morelos, pp. 121-127. Instituto Nacional de Antropología e Historia, México.

1982b Las excavaciones en el Conjunto 1 D. In *Memoria del Proyecto Arqueológico Teotihuacan 80-82, Primeros resultados,* edited by. R. Cabrera, I. Rodríguez, and N. Morelos, pp. 89-126. Instituto Nacional de Antropología e Historia, México.

Joralemon, Peter D.
1971 *A Study of Olmec Iconography*. Studies in Pre-Columbian Art and Archaeology, N° 7. Dumbarton Oaks Research Library and Collection, Washington, D.C.

1976 Olmec Dragon: A Study in Pre-columbian Iconography. In *Origins of Religious Art and Iconography in Preclassic Mesoamerica*, edited by H. B. Nicholson, pp. 27-71. Latin American Studies Series, No. 31. University of California / Latin American Center, Los Angeles.

1996 In Search of the Olmec Cosmos: Reconstructing the World View of Mexico's First Civilization. In *Olmec Art of Ancient Mexico*, edited by Elizabeth P. Benson and Beatriz de la Fuente, pp. 51-60. National Gallery of Art, Washington, D.C.

Joyce, Rosemary A.
2000 Heirlooms and Houses: Materiality and Social Memory. In *Beyond Kinship: Social and Material Reproduction in House Societies*, edited by Rosemary A. Joyce and Susan D. Gillespie, pp. 189-212. University of Pennsylvania Press, Philadelphia, Pennsylvania.

Joyce, T.A., and H.A. Knox
1931 Sculptured Figures from Vera Cruz State, Mexico. *Man* 31: 17.

Just, Bryan R.
2005 Modifications of Ancient Maya Sculpture. *RES* 48: 69-82.

Kappelman, Julia Guernsey and F. Kent Reilly, III
2001 Paths to Heaven, Ropes to Earth: Birds, Jaguars, and Cosmic Cords in Formative Period Mesoamerica. *Ancient America* 2/3: 33-52.

Keesing, Roger M.
1984 Rethinking Mana. *Journal of Anthropological Research* 40 (1): 137-156.

Kertzer, David I.
1988 *Ritual, Politics, and Power*. Yale University Press, New Haven, Connecticut.

Kumar, G.
2007 Understanding the Creation of Early cupules by Replication with Special Reference to Daraki-Chattan in India. Paper presented to the International Cupule Conference, Cochabamba, Bolivia, July 17-19.

Ladrón de Guevara, Sara
2006 Museo de Antropología de Xalapa. *Arqueología Mexicana*, Edición Especial No. 22. Editorial Raices, México.

2008 Insignias de poder: Permanencia y transformación de monumentos ecultóricos. In *Arqueología, paisaje y cosmovisión en los Tuxtlas*, edited by Lourdes Budar and Sara Ladrón de Guevara, pp.131-143. Universidad Veracruzana, Xalapa, Veracruz.

2010 Reutilización de monumentos olmecas en tiempos del clásico. *Ancient Mesoamerica* 21 (1): 63-68. Cambridge University Press.

Lambert, Arnaud
2010 The Cupulate Complexes of Chalcatzingo, Morelos: A Preliminary Investigation. *American Indian Rock Art* 36: 183-192.

2011 Olmec-Style Art, Rock Art and Social Practice in Ancient Mesoamerica. Unpublished Ph.D. dissertation. Department of Anthropology, Brandeis University, Waltham, Massachusetts.

Legrand, Françoise

1965 Histoire d'une Tête Olmèque. *Archéologia* 2: 41-43. Dijon, France.

López Luján, Leonardo, Laura Filloy Nadal, Barbara Fash, William L. Fash and Pilar Hernández
2006 The Destruction of Images in Teotihuacan: Anthropomorphic Sculpture, Elite Cults, and the End of a Civilization. *RES* 49/50:13-39.

Lowe, Gareth W.
1989 The Heartland Olmec: Evolution of Material Culture. In *Regional Perspectives on the Olmec,* edited by Robert J. Sharer and David C. Grove, pp. 33-67. Cambridge University Press/School of American Research, New York.

1998 *Mesoamérica olmeca: Diez preguntas*. Instituto Nacional de Antropología e Historia, México.

Luckert, Karl W.
1976 *Olmec Religion: A Key to Middle America and Beyond*. University of Oklahoma Press, Norman, Oklahoma.

Magni, Caterina
1995a Identification et Function de l'Animal dans l'Art Olmèque. *Lares* 3: 339-356.

1995b El simbolismo de la cueva en la iconografía olmeca, México. *Cuicuilco* 1 (3): 89-126.

1996 La Créature Composite dans l'Art Mésoaméricain: Essai d'Interprétation Iconographique. *Recherches Amérindiennes au Québec* 26 (3/4): 65-73.

1998 Imagerie de la Caverne-Miroir dans l'Art du Mexique Ancien. *Caravelle* 70: 5-28. Toulouse, France.

1999 *Archéologie du Mexique: Les Olmèques*. Éditions Artcom, Paris.

2000 Sur les Traces de la Mutilation Olmèque, Mexique. In *De la Blessure Corporelle à la Mutilation Symbolique dans le Monde Amérindien*, edited by Caterina Magni, pp. 7-33. Ateliers de Caravelle, No. 17. IPEALT, Université Toulouse – Le Mirail, Toulouse, France.

2003 *Les Olmèques: Des Origines au Mythe*. Éditions du Seuil, Paris.

Martin, Simon
2000 At the Periphery: The Movement, Modification, and Re-Use of Early Monuments in the Environs of Tikal. *Acta Mesoamericana* 10: 51-61.

Matthews, Peter
1983 *Corpus of Maya Hieroglyphic Inscriptions, Volume 6, Part 1: Tonina*. Harvard University Press, Cambridge, Massachusetts.

Medellín Zenil, Alfonso
1960 Monolitos inéditos olmecas. *La Palabra y el Hombre* 16: 75-97. Xalapa, Veracruz.

1963 The Olmec Culture. In *The Olmec Tradition*, pp. 1-14. The Museum of Fine Arts, Houston, Texas.

1965 La escultura de Las Limas. *Boletín del Instituto Nacional de Antropología e Historia* 21: 5-8. México.

1968 El dios jaguar de San Martín. *Boletín del Instituto Nacional de Antropología e Historia* 33: 9-16. México.

1971 *Monolitos olmecas y otros en el Museo de la Universidad de Veracruz*. Corpus Antiquitatum Americanensium, Vol. V. Union Académique Internationale / Instituto Nacional de Antropología e Historia, México.

1975 *Guia official del Museo de Antropología de la Universidad Veracruzana*. Universidad Veracruzana, Xalapa, Veracruz.

Melgarejo Vivanco, José Luis
1975 *El problema olmeca*. Coatzacoalcos, Xalapa, Veracruz.

Milbrath, Susan
1979 *A Study of Olmec Sculptural Chronology*. Studies in Pre-Columbian Art and Archaeology, No. 21. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

Miller, Mary Ellen
1991 Rethinking the Classic Period Sculptures of Cerro de las Mesas, Veracruz. In *Settlement Archaeology of Cerro de las Mesas, Veracruz, Mexico,* edited by Barbara L. Stark, pp. 26-38. Cotsen Institute of Archaeology, University of California, Los Angeles.

Millon, René
1988 The Last Years of Teotihuacan Dominance. In *The Collapse of Ancient States and Civilizations*, edited by Norman Yoffee and George L. Cowgill, pp. 102-164. University of Arizona Press, Tucson.

Mock, Shirley Boteler
1998 The Defaced and Forgotten: Decapitation and Flaying/Mutilation as a Termination Event at Colha, Belize. In *The Sowing and the Dawning: Termination, Dedication and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, edited by Shirley Mock, pp. 113-124. University of New Mexico Press, Albuquerque, New Mexico.

Morante López, Rubén
2004 *Guía Oficial del Museo de Antropología de Xalapa*. Universidad Veracruzana/Gobierno del Estado de Veracruz, Xalapa, Veracruz.

Mountjoy, Joseph B.
1987 *Proyecto Tomatlán de salvamento arqueológico: El arte rupestre*. Colección Científica, No. 163. Instituto Nacional de Antropología e Historia, México.

1991 West Mexican Stelae from Jalisco and Nayarit. *Ancient Mesoamerica* 2 (1): 21-33. Cambridge University Press.

Museum of Fine Arts
1963 *The Olmec Tradition*. The Museum of Fine Arts, Houston, Texas.

Neely J. A., S. C. Caran and B. M. Winsborough
1990 Irrigated Agriculture at Hierve el Agua, Oaxaca, Mexico. In *Debating Oaxaca Archaeology*, edited by Joyce Marcus, pp. 115-189. Anthropological Papers, No. 84. Museum of Anthropology, University of Michigan, Ann Arnor, Michigan.

Nelson, Fred W. and John E. Clark
1990 Determination of Exchange Patterns in Prehistoric Mesoamerica. In *Nuevos Enfoques en el Estudio de la Lítica*, edited by Ma. de los Dolores Soto de Arechavaleta, pp. 153-176. Universidad Nacional Autónoma de México, México.

Neurath, Johannes
2010 Envoltorios sagrados y culto a los ancestros. *Arqueología Mexicana* 18 (106): 60-65. Editorial Raices, México.

Noble, Sandra
1998 Maya Dedications of Authority. In *The Sowing and the Dawning: Termination, Dedication and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, edited by Shirley Mock, pp. 65-79. University of New Mexico Press, Albuquerque, New Mexico.

Ochoa, Lorenzo, and Marcia Castro-Leal
1986 *Archaeological Guide of the Park-Museum of La Venta*. Gobierno del Estado de Tabasco, Villahermosa, Tabasco.

Olivier, Guilhem
2006 The Sacred Bundles and the Coronation of the Aztec King in Mexico-Tenochtitlán. In *Sacred Bundles: Ritual Acts of Wrapping and Binding in Mesoamerica*, edited by Julia Guernsey and F. Kent Reilly, pp. 199-225. Ancient America Special Publication N°1. Boundary End Archaeology Research Center, Barnardsville, North Carolina.

Ortíz Ceballos, Ponciano and Ma. del Carmen Rodriguez M.
1989 Proyecto Manatí 1989. *Arqueología* 1: 23-52. Instituto Nacional de Antropología e Historia, México.

1994 Los espacios sagrados olmecas: El Manatí, un caso especial. In *Los olmecas en Mesoamérica*, edited by John E. Clark, pp. 69-92. Citibank, Mexico.

1999a The Gulf Coast Cultures and the Recent Archaeological Discoveries at El Manatí, Veracruz. In *The Archaeology of Mesoamerica: Mexican and European Perspectives*, edited by Warwick Bray and Linda Manzilla, pp. 97-115. British Museum Press, London.

1999b Olmec Ritual Behavior at El Manatí: A Sacred Space. In *Social Patterns in Pre-Classic Mesoamerica*, edited by David C. Grove and Rosemary A. Joyce, pp. 225-254. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

2000 The Sacred Hill at El Manatí: A Preliminary Discussion of the Site's Ritual Paraphernalia. In *Olmec Art and Archaeology in Mesoamerica*, edited by John Clark and Mary Pye, pp. 74-93. Studies in the History of Art, Volume 58. Yale University Press, New Haven, Connecticut.

Parmentier, Richard
1987 *The Sacred Remains: Myth, History, and Polity in Belau*. University of Chicago Press, Chicago.

Parsons, Lee A.
1981 Post-Olmec Stone Sculpture: The Olmec-Izapan Transition on the Southern Pacific Coast and Highlands. In *The Olmec and Their Neighbors: Essays in Memory of Matthew W. Stirling*, edited by Elizabeth P. Benson, pp. 257-288. Dumbarton Oaks Research Library and Collection, Washington, D.C.

1986 *The Origins of Maya Art: Monumental Stone Sculpture of Kaminaljuyu, Guatemala, and the Southern Pacific Coast*. Studies in Pre-Columbian Art and Archaeology, No. 28. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

Pendergast, David M.
1998 Intercession with the Gods: Caches and Their Significance at Altun Ha and Lamanai, Belize. In *The Sowing and the Dawning: Termination, Dedication and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, edited by Shirley Mock, pp. 55-63. University of New Mexico Press, Albuquerque, New Mexico.

Pérez de Lara, Jorge, and John Justeson
2006 Photographic Documentation of Monuments with Epi-Olmec Script/Imagery. FAMSI Grantee Report. Foundation for the Advancement of Mesoamerican Studies, Inc., http://www.famsi.org/reports/05084/index.html, accessed August 9, 2012.

Pérez Suárez, Tomás
1997 Los olmecas y los dioses del maíz en Mesoamérica. In *De hombres y dioses*, edited by X. Noguez and A. López Austin, pp. 17-58. Colegio de Michoacán, Zamora, Michoacán.

Piña Chan, Roman
1964 *Los olmecas*. Instituto Nacional de Antropología e Historia, México.

1989 *The Olmec: Mother Culture of Mesoamerica*. Rizzoli, New York.

Pohorilenko, Anatole
1974 Olmec Ceremonial Markings: Striations and Cupping Effects. Unpublished M.A. thesis. Department of Anthropology, Tulane University, New Orleans.

1975 New Elements of Olmec Iconography: Ceremonial Markings. *Reuniones de Mesa Redonda (13th Session)* 1: 265-281. Sociedad Mexicana de Antropología, México.

1990 Structure and Periodization of the Olmec Representational System. Unpublished Ph.D. dissertation. Department of Anthropology, Tulane University, New Orleans.

1997 Cuatro esculturas monumerntales de La Venta, Tabasco. In *Homenaje al doctor Ignacio Bernal*, edited by L. Manrique, and N. Castillo, pp. 181-199. Instituto Nacional de Antropología e Historia, México.

2007 Updating Olmec Extraneous Markings. *The Codex (at the University of Pennsylvania Museum of Archaeology and Anthropology)* 15(3): 16-30.

Pool, Christopher A.
2007 *Olmec Archaeology and Early Mesoamerica*. Cambridge University Press, New York.

2010 Stone Monuments and Earthen Mounds: Polity and Place-Making at Tres Zapotes, Veracruz. In *The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition*, edited by Julia Guernsey, John E. Clark and Barbara Arroyo, pp. 97-127. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

Pool, Christopher A., and Michael A. Ohnersorgen
2003 Archaeological Survey and Settlement at Tres Zapotes. In *Settlement Archaeology and Political Economy at Tres Zapotes, Veracruz, Mexico*, edited by Christopher Pool, pp. 7-31. Cotsen Institute of Archaeology, University of California, Los Angeles.

Pool, Christopher A. and Ponciano Ortíz Ceballos
2008 Tres Zapotes como centro olmeca: Nuevos datos. In *Olmeca: Balance y perspectivas*, edited by María Teresa Uriarte and Rebecca B. González Lauck, pp. 425-443. Memoria de la Primera Mesa Redonda, Tomo II. Universidad Nacional Autónoma de Mexico, México.

Pope, K. O., M. D. Pohl, J. G., Jones, D. L. Lentz, C. L. von Nagy, F. J. Vega and I. R. Quitmyer
2001 Origin and Environmental Setting of Ancient Agriculture in the Lowlands of Mesoamerica. *Science* 292: 1370-1373.

Porter, James B.
1989 Olmec Colossal Heads as Recarved Thrones: "Mutilation," Revolution, and Recarving. *RES* 17/18: 23-29.

1990 Las cabezas colosales olmecas como altares reesculpidos: Mutilación, revolución y reesculpido. *Arqueología* 3: 91-97. Instituto Nacional de Antropología e Historia, México.

1992 Estelas celtiformes: Un nuevo tipo de escultura olmeca y sus Implicaciones para los epigrafistas. *Arqueología* 8: 3-14. Instituto Nacional de Antropología e Historia, México.

Pugh, Marion Stirling
1981 An Intimate View of Archaeological Exploration. In *The Olmec and Their Neighbors: Essays in Honor of Matthew W. Stirling*, edited by Elizabeth P. Benson, pp. 1-13. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

Reilly, F. Kent, III
1989 Cosmos and Rulership: The Function of Olmec-Style Symbols in Formative Period Mesoamerica. *Visible Language* 11: 12-37.

1994 Visions to Another World: Art, Shamanism, and Political Power in Middle Formative Mesoamerica. Unpublished Ph.D. dissertation. Department of Anthropology, University of Texas, Austin, Texas.

1995 Art, Ritual, and Rulership in the Olmec World. In *The Olmec World: Ritual and Rulership*. Pp. 27-46. The Art Museum, Princeton University, Princeton, New Jersey.

1999 Mountains of Creation and Underworld Portals: The Ritual Function of Olmec Architecture at La Venta, Tabasco. In *Mesoamerican Architecture as a Cultural Symbol*, edited by Jeff Karl Kowalwski, pp. 14-39. Oxford University Press, New York.

2002 The Landscape of Creation: Architecture, Tomb, and Monument Placement at the Olmec Site of La Venta. In *Heart of Creation: The Mesoamerican World and the Legacy of Linda Schele*, edited by Andrea Stone, pp. 34-65. University of Texas Press, Austin, Texas.

2010 La Venta. In *Olmec: Colossal Masterworks of Ancient Mexico*, edited by Kathleen Berrin and Virginia M. Fields, pp. 44-53. Fine Arts Museums of San Francisco/Los Angeles County Museum of Art/Yale University Press, New Haven, Connecticut.

Reilly, F. Kent, III and James F. Garber
2003 The Symbolic Representation of Warfare in Formative Period Mesoamerica. In *Ancient Mesoamerican Warfare*, edited by M. Kathryn Brown and Travis W. Stanton, pp. 127-148. Altamira Press, New York.

Rodriguez M., Ma. del Carmen and Ponciano Ortíz Ceballos
1997 Olmec Ritual and Sacred Geography at Manatí. In *Olmec to Aztec: Settlement Patterns in the Ancient Gulf Coast Lowlands,* edited by Barbara L. Stark and Philip J. Arnold III, pp. 68-95. University of Arizona Press, Tucson, Arizona.

2000 A Massive Offering of Axes at La Merced, Hidalgotitlán, Veracruz, Mexico. In *Olmec Art and Archaeology in Mesoamerica*, edited by John Clark and Mary Pye, pp. 155-167. Studies in the History of Art, Volume 58. Yale University Press, New Haven, Connecticut.

Rivera Grijalba, Victor
1991 Posible sistema de tallado de las denominadas cabezas colosales olmecas. *Cuadernos de Arquitectura Mesoamericana* 12: 75-82. Universidad Nacional Autónoma de México, México.

Ruiz Gordillo, Omar
1982 Nueva cabeza colossal en San Lorenzo Tenochtitlán, Ver. In *Cuadernos de los Centros Regionales, Centro Regional de Veracruz*, pp. 1-12. Instituto Nacional de Antropología e Historia, México.

Rust, William F., and Robert J. Sharer
1988 Olmec Settlement Data from La Venta, Tabasco, Mexico. *Science* 242 (4875): 102-104.

Saville, Marshall
1929a Votive Axes from Ancient Mexico. *Indian Notes* 6: 266-299.

1929b Votive Axes from Ancient Mexico II. *Indian Notes* 6:335-342.

Schele, Linda
1995 The Olmec Mountain and Tree of Creation in Mesoamerican Cosmology. In *The Olmec World: Ritual and Rulership*, pp. 105-117. The Art Museum, Princeton University, Princeton, New Jersey.

Schnabl, Emily J.
1988 Patterns in Olmec Monument Mutilation at La Venta and San Lorenzo. Unpublished B.A. thesis. Department of Anthropology, University of Illinois, Urbana-Champaign, Illinois.

Schneider, David M.
1984 *A Critique of the Study of Kinship*. University of Michigan Press, Ann Arbor, Michigan.

Schobinger, Juan
1997 *Arte prehistórico de América*. Editoriale Jaca Book, Milan / Consejo Nacional para la Cultura y las Artes, México.

Scott, Ann M. and James E. Brady
2005 Formative Cave Utilization: An Examination of Mesoamerican Ritual Foundations. In *New Perspectives on Formative Mesoamerican Cultures*, edited by Terry G. Powis, pp. 147-157. BAR International Series, N° 1377. BAR Publishing, Oxford, England.

Sedat, David W.
1992 Preclassic Notation and the Development of Maya Writing. In *New Theories on the Ancient Maya*, edited by Elin C. Danien and Robert J. Sharer, pp. 81-90. University Museum Symposium Series, N° 3. University of Pennsylvania, University Museum, Philadelphia, Pennsylvania.

Sharer, Robert J.
1989 The Olmec and the Southeast Periphery. In *Regional Perspectives on the Olmec*, edited by Robert J. Sharer and David C. Grove, pp. 247-271. Cambridge University Press/School of American Research, New York.

Sharer, Robert J., and David W. Sedat
1987 *Archaeological Investigations in the Northern Maya Highlands, Guatemala: Interaction and the Development of Maya Civilization*. The University Museum, University of Pennsylvania, Philadelphia, Pennsylvania.

Shook, Edwin M.
1958 The Temple of the Red Stela. *Expedition* 1(1): 26-33. Philadelphia.

Sims, Michael
2005 Investigating an Olmec Capital. *American Archaeology* 9(4): 32-38.

Smith, Tillie
1963 Main Themes of the Olmec Art Tradition. *Papers of the Kroeber Anthropological Society* 28: 121-213.

Soustelle, Jacques
1995 *Los olmecas*. Fondo de Cultura Económica, México.

Stanton, Travis W. and M. Kathryn Brown
2003 Studying Warfare in Ancient Mesoamerica. In *Ancient Mesoamerican Warfare*, edited by M. Kathryn Brown and Travis W. Stanton, pp. 1-16. Altamira Press, New York.

Stark, Barbara L.
2000 Framing the Gulf Olmecs. In *Olmec Art and Archaeology in Mesoamerica*, edited by John Clark and Mary Pye, pp. 30-53. Studies in the History of Art, Volume 58. Yale University Press, New Haven, Connecticut.

Steede, Neil, and Lawrence F. Athy
1998 A Report Describing the Grooves on the Colossal Stone Heads of La Venta. In *Memorias del Tercer Congreso Internacional de Mayistas* (9 al 15 de julio de 1995) 1: 321-334. Universidad Nacional Autónoma de Mexico; Universidad de Quintana Roo, México.

2000 *A Report Describing the Grooves on the Colossal Stone Heads of La Venta*. Early Sites Research Society, Independence, Missouri.

Stirling, Matthew W.
1940 Great Stone Faces of the Mexican Jungle: Five Colossal Heads and Numerous Other Monuments of Vanished Americans are Excavated by the latest National Geographic-Smithsonian Expedition. *National Geographic* 78: 309-334.

1943 *Stone Monuments of Southern Mexico*. Bureau of American Ethnology Bulletin No. 138. Smithsonian Institution, Washington, D.C.

1947 On the Trail of La Venta Man. *National Geographic* 91: 137-172.

1955 *Stone Monuments of the Rio Chiquito, Veracruz, Mexico*. In Anthropological Papers, No. 43. pp. 1-23. Bureau of American Ethnology Bulletin No. 157. Smithsonian Institution, Washington, D.C.

1965 Monumental Sculpture of Southern Veracruz and Tabasco. In *Handbook of Middle American Indians* Volume 3 - *Archaeology of Southern Mesoamerica,* Part 2, edited by Gordon R. Willey, pp. 717-738. University of Texas Press, Austin, Texas.

1968 Three Sandstone Monuments from La Venta Island. In *Papers on Mesoamerican Archaeology*, pp. 35-39. Contributions of the University of California Archaeological Research Facility, No. 5. University of California, Department of Anthropology, Berkeley, California.

Stone, Andrea
1992 From Ritual in the Landscape to Capture in the Urban Center: The Recreation of Ritual Environments in Mesoamerica. *Journal of Ritual Studies* 6 (1): 109-132.

Strecker, Matthias, and Gertrud Weber
1980 *Petroglyphen der Finca Las Palmas (Chiapas, Mexiko)*. Akademische Druck- und Verlagsanstalt, Graz, Austria.

Stuart, David
2010 Shining Stones: Observations on the Ritual Meaning of Early Maya Stelae. In *The Place of Stone Monuments: Context, Use, and Meaning in Mesoamerica's Preclassic Transition*, edited by Julia Guernsey, John E. Clark, and Barbara Arroyo, pp. 283-298. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

Symonds, Stacey
2000 The Ancient Landscape at San Lorenzo Tenochtitlán, Veracruz, Mexico. In *Olmec Art and Archaeology in Mesoamerica*, edited by John Clark and Mary Pye, pp. 55-73. Studies in the History of Art, Volume 58. Yale University Press, New Haven, Connecticut.

Symonds, Stacey, Ann Cyphers and Roberto Lunagómez
2002 *Asentamiento prehispánico en San Lorenzo Tenochtitlán*. Universidad Nacional Autónoma de Mexico, México.

Tate, Carolyn
1995 Art in Olmec Culture. In *The Olmec World: Ritual and Rulership*, pp. 47-67. The Art Museum, Princeton University, Princeton, New Jersey.

2001 Poetics of Power and Knowledge at La Venta. In *Landscape and Power in Ancient Mesoamerica*, edited by Rex Koontz, Kathryn Reese-Taylor, and Annabeth Headrick, pp. 137-168. Westview Press, Boulder, Colorado.

2007 La Venta and a Feminine Shamanic Tradition in Formative Mesoamerica. *Acta Americana* 15 (2): 5-30.

2011 *Reconsidering Olmec Visual Culture: The Unborn, Women, and Creation.* University of Texas Press, Austin, Texas.

Tate, Carolyn and Gordon Bendersky
1999 Olmec Sculptures of the Human Fetus. *PARI Online Publications, Newsletter No. 30*, http://www.mesoweb.com/pari/publications/news_archive/30/olmec_sculpture.html, accessed August 9, 2012.

Taube, Karl A.
1995 The Rainmakers: The Olmec and Their Contribution to Mesoamerican Belief and Ritual. In *The Olmec World: Ritual and Rulership*, pp. 83-104. The Art Museum, Princeton University, Princeton, New Jersey.

2000 Lightning Celts and Corn Fetishes: The Formative Olmec and the Development of Maize Symbolism in Mesoamerica and the American Southwest. In *Olmec Art and Archaeology*, edited by John E. Clark and Mary E. Pye, pp. 297-337. Studies in the History of Art, Volume 58. Yale University Press, New Haven, Connecticut.

2004 *Olmec Art at Dumbarton Oaks*. Pre-Columbian Art at Dumbarton Oaks, No. 2. Dumbarton Oaks/Trustees of Harvard University, Washington D.C.

Urcid, Javier and Arthur A. Joyce
2001 Carved Monuments and Calendrical Names: The Rulers of Rio Viejo, Oaxaca. *Ancient Mesoamerica* 12 (2): 199-216. Cambridge University Press.

Vásquez Zárate, Sergio
2008 Antecedentes de investigación arqueológica en Los Tuxtlas. In *Arqueología, paisaje y cosmovisión en los Tuxtlas*, edited by Lourdes Budar and Sara Ladrón de Guevara, pp. 23-34. Universidad Veracruzana, Xalapa, Veracruz.

Wedel, Waldo R.
1952 Structural Investigations in 1943. In *La Venta, Tabasco: A Study of Olmec Ceramics and Art*, pp. 34-79. Bureau of American Ethnology, Bulletin 153. Smithsonian Institution, Washington D.C.

Wicke, Charles R.
1971 *Olmec: An Early Art Style of Pre-Columbian Mexico*. University of Arizona Press, Tucson, Arizona.

Williams, Howel and Robert F. Heizer
1965 Sources of Rocks used in Olmec Monuments. In *Sources of Stones Used in Prehistoric Mesoamerican Sites*. pp. 1-39. Contributions of the University of California Archaeological Research Facility, No. 1. University of California, Department of Anthropology, Berkeley, California.

Winfield Capitaine, Fernando
1987 *Guia de Monumentos del Museo de Antropología de Xalapa*. Universidad Veracruzana, Museo de Antropología de Xalapa, Xalapa, Veracruz.

1991 La Estela 1 de La Mojarra y otros monumentos. *La Palabra y el Hombre* 80: 75-122. Xalapa, Veracruz.

Wolley, Claudia
2002 Compendio de petrograbados y monumentos con depresiones de Tak´alik Ab´aj (antes Abaj Takalik). In *XV Simposio de Investigaciones Arqueológicas en Guatemala, 2001*, edited by J.P. Laporte, H. Escobedo and B. Arroyo, pp. 365-377. Museo Nacional de Arqueología y Etnología, Guatemala.